COAL AGE

The Only National Paper Devoted to Coal Mining and Coal Marketing

C. E. LESHER AND R. DAWSON HALL, *Editors.*

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Sugar, Coal and Congress

WE ARE about to feel the new emergency tariff in action. The New York *Evening Post* quotes from a bulletin of the New York Coffee and Sugar Exchange as follows: "In the event of the Emergency Tariff Bill now before the Congress of the United States becoming a law, which provides for an increase in the duty on 96 deg. test Cuba centrifugal raw sugar of .5952c. per pound, the value of all outstanding contracts of standard fine granulated sugar shall be increased 63c. per pound, in accordance with sugar trade rule 18, effective upon the opening of business on the day following the signing of said bill by the President."

An increase of 6.3 mills per pound is $12.60 per net ton and there are consumed per year in this country about 3,750,000 net tons of sugar. The new sugar tariff will cost the people of the United States, therefore, something over $47,000,000 per year. This sum is of the same order of magnitude as the increase in the cost of anthracite to domestic consumers in the coal year just closed occasioned by the increase in wages of mine labor awarded by the Anthracite Wage Commission last summer. The increase in wages, it will be remembered, caused the operators to raise the price of domestic sizes $1 per gross ton, and as there were produced and distributed about 50,000,000 gross tons, the cost to the country was $50,000,000, compared with the tax of approximately $47,000,000 levied by the new tariff on one item alone. In round numbers there are required 100,000,000 tons of coal for household use in the United States. In effect, therefore, the new sugar tariff is equivalent to raising the price of coal to householders 47c. per ton.

The Road to Understanding

IT IS profitable occasionally to go back to the beginning for a fresh start in the discussions of the coal question. Intermittent periods of high prices are the manifestations of the trouble with coal. The causes of these high prices are perfectly well known to those who take the trouble to inquire into the questions seriously —shortage of supply in times of greatest demand, caused in the case of bituminous coal by lack of ability of the railroads to meet the peak demand for cars and transportation and in the case of anthracite by lack of labor and mine capacity. In the past two years strikes of mine labor have been factors of no mean importance contributing to the shortage of supply and consequent high prices.

There are now being held in Washington a series of conferences between the several committees representing the coal industry—producers of anthracite and bituminous, wholesalers and retailers—on the one hand and the secretaries of Commerce and the Interior and Senator Frelinghuysen, representing the Government and the public, on the other hand. These men are discussing the coal question in general and the Frelinghuysen coal stabilization bill in particular. As we have previously pointed out, this bill undertakes to do two unrelated things—require certain performance on the part of the coal industry and reorganize Government departments. The bill (S.1807) is admittedly tentative, subject to change in almost every respect. The actual terms as contained in the printed document are not therefore so important as the recorded positions of the several arbiters, if we may so term them, who are remaking the measure.

Senator Frelinghuysen has advised Congress that the purpose of his bill "is to direct the Department of Commerce and the Bureau of Mines to make a careful study of all conditions pertaining to the coal industry, in order that the Government may assist in stabilizing the coal industry and in working out the problems which now exist in the mining, distribution and sale of coal. The object is not to interfere in any way with the business of the coal industry, but, rather, to help it through co-operation and advisory effort."

Mr. Hoover has nowhere more clearly stated his position than in his message to the convention of the National Coal Association (*Coal Age*, May 26, page 962), wherein he said: "It is my belief that both the coal operator and the public will be better protected by regular, prompt and monthly publication of fundamental facts than by extension of legal regulation beyond existing anti-trust acts. . . The outstanding economic difficulty of the coal as well as some other industries of the country is the cost and risk imposed both on the industry and the community by highly intermittent production. I do not imagine that publicity is a cure-all to intermittency or any other economic ill, but at least it is an assistance toward sounder and more stable industry." Secretary Fall may be expected to bring to the conference the same sound ideas of service that have characterized the history of the Department of the Interior through forty years of contact with the mining industry.

On this record how can we do otherwise than concede that these representatives of the Government are proceeding in good faith and that they seek not to shackle but to help the coal industry? We fully appreciate that in the background are those in Congress who would have drastic regulation, socialistic and destructive in the extreme, imposed on coal—some, like Senator La Follette, because they really believe in it, and others, like Senator Calder, because it may be considered good politics.

No individual and no group of coal men entering this conference on the coal question desires or favors regulation of the industry. The producers, middlemen and retailers are alike opposed to regulation and the beginnings of regulation. This conference between Government and coal, the most important ever held in times of peace, is to consider not the regulation of coal but

how to help the industry without regulation. From the representatives of the American Wholesale Coal Association, who are there as spectators, because so instructed, to the coal operators who, because given power by their constituency to act, are in position to be constructive, the coal industry has been invited in to help in the shaping of its future relation to the public. It is a golden opportunity for the coal industry that may never return.

To go back again to the fundamentals of the question, we believe we can summarize the opinion of those directly concerned by saying that the coal "question" is economic and not political, that legislation offers no answer because all the laws of the land cannot prevail upon a consumer to buy coal when he does not want coal, that regulation of price is unfair to seller, contrary to American ideas of business and in the long run to the disadvantage of the buyer. The hope of betterment lies in better understanding of coal on the part of the consuming and buying public and of more tolerance and self-restraint on the part of the coal seller. There is no panacea for the coal problem. Better understanding all around is the only way to promote that ideal condition in which the consumer may have his fuel regularly at prices that permit industry to thrive and afford the coal industry the profit to which it is entitled.

Opinion among coal men as to the wisdom of sitting in with the Government on such a discussion varies from the one extreme of those who see possible real benefits accruing from such negotiations with friendly interests to those who are "forever and amen" in opposition to the minutest concession to the idea that the consumer has any right to knowledge of any detail of the coal man's business. With the theory of those who fight the "beginning of beginnings" of Federal regulation of industry we have sympathy. It seems to us, however, that there is more opportunity for the present discussions to result in permanent benefit to the coal industry than there is chance for a beginning of regulation of the business.

We find a real sentiment in the coal industry, from end to end, to go through with a constructive program —to accept at face value the helpful sympathetic avowals of Hoover and Frelinghuysen. We are even hopeful that, if Premier Briand can go to the French people with protestations of the ultimate good faith of the German Government and if George Harvey can occupy Wilson's seat on the Supreme Economic Council, George Cushing will see his way clear to leave his crusader's pen hung high in the Woodward Building and lend his genius, understanding and persuasive powers—for which none has great appreciation and more regard than we—to help advance the common cause.

J. G. Bradley, newly-elected president of the National Coal Association, would stand "four square" with ex-Governor Cornwell, who said to the operators "It is your job . . . to put that question before the country and to impress it upon the public mind and to impress it upon the mind of your legislators . . . that the remedy for this question lies with the people themselves rather than with the creation of new statutes. . . . So you have a task in front of you, but the biggest task, the immediate task, in my judgment, is a campaign of education intelligently conducted and based upon absolute square dealing; and I believe if you will conduct it in that way, in due time your problem may be solved and worked out just as we hope all other industrial problems of this country may be worked out, without governmental interference."

Safety in Hydraulic Filling

SOLUTIONS of the mine-cave difficulty in Scranton are hard to suggest and harder still to put in operation. It might have been readily possible to have filled the working hydraulically with surface material had steps been taken earlier. By this time, however, Scranton is so extensively undermined that the work of filling would be an immense job.

No attempt appears to have been made to ascertain what earth and rock can be dug for and how much it will cost to put in condition for flushing. There is no question but that such excavation could be so planned as not to be a total loss. Those who have been paying for injuries to buildings would be spared that expense. Coal would be withdrawn more completely than in the past, and the pits from which the material was obtained might be placed either where coal would be uncovered or rough ground be rendered more habitable, which would minimize the enormous expense.

It is interesting to note that filling has been found advisable under many foreign cities and has been used in mines like the one N. Yamaoka described last week, where no property has to be saved and where the only advantages attained are an increase in the amount of coal obtained and freedom from expensive heading upkeep, spontaneous combustion and dust explosions.

It is true that the conditions in the anthracite region do not parallel those in the Fushun Colliery so well described in last week's issue. The cost of heading upkeep in the mines under Scranton is by comparison low, for the pillar coal is hard. The dangers of spontaneous combustion and dust explosions are absent, and the extraction even without second mining is probably larger. But it is certain that experimentation on a working scale might well be justified, and with such information at hand the companies would be able to decide whether it would pay in dividends of coal saved, voluntary compensations made unnecessary and good will acquired.

Coming of the Solid Car

WHEN the Bureau of Mines was first started it announced itself as in favor of the solid car and showed how generally it was in use abroad. The new wagon appeared to be a reasonable substitute if only the old cars could be scrapped and a different type of dump adopted. The matter was passed along as a good suggestion, but as not essentially practical.

Ten or twelve years have passed and now without heralding or any further effort of the bureau the solid car is coming thousands strong. The manufacturer is providing the dump and the machinery. He will dump the solid car singly or in trips; he will provide it with a cage from which it can be automatically dumped; he has the car as one of his standard designs. The trouble with the Bureau of Mines proposal was that it was not backed with a commercial follow-up. It was a suggestion; nothing more. Industry no longer goes forward on suggestions. It demands completed machinery.

Th ideas must be concrete—they must be wrought into iron or steel or be forgotten. It is useless to develop a Gibbs apparatus, for instance, unless there is someone at hand to construct it. Fortunately in that instance the manufacturer was found, but too often the ideas fall on sterile ground because the bureau, to succeed, must not only find operators ready to adopt but manufacturers willing and able to supply.

Rosita, Mexico, a Carefully Planned City; Pleasing, Comfortable and Hygienic—I

Village for Employees at Coal Mines and Byproduct Plant of American Smelting & Refining Co.—Careful Analysis Made of Probable Population and Its Needs Before Any Building Was Done—Description of Town Site and Materials of Construction

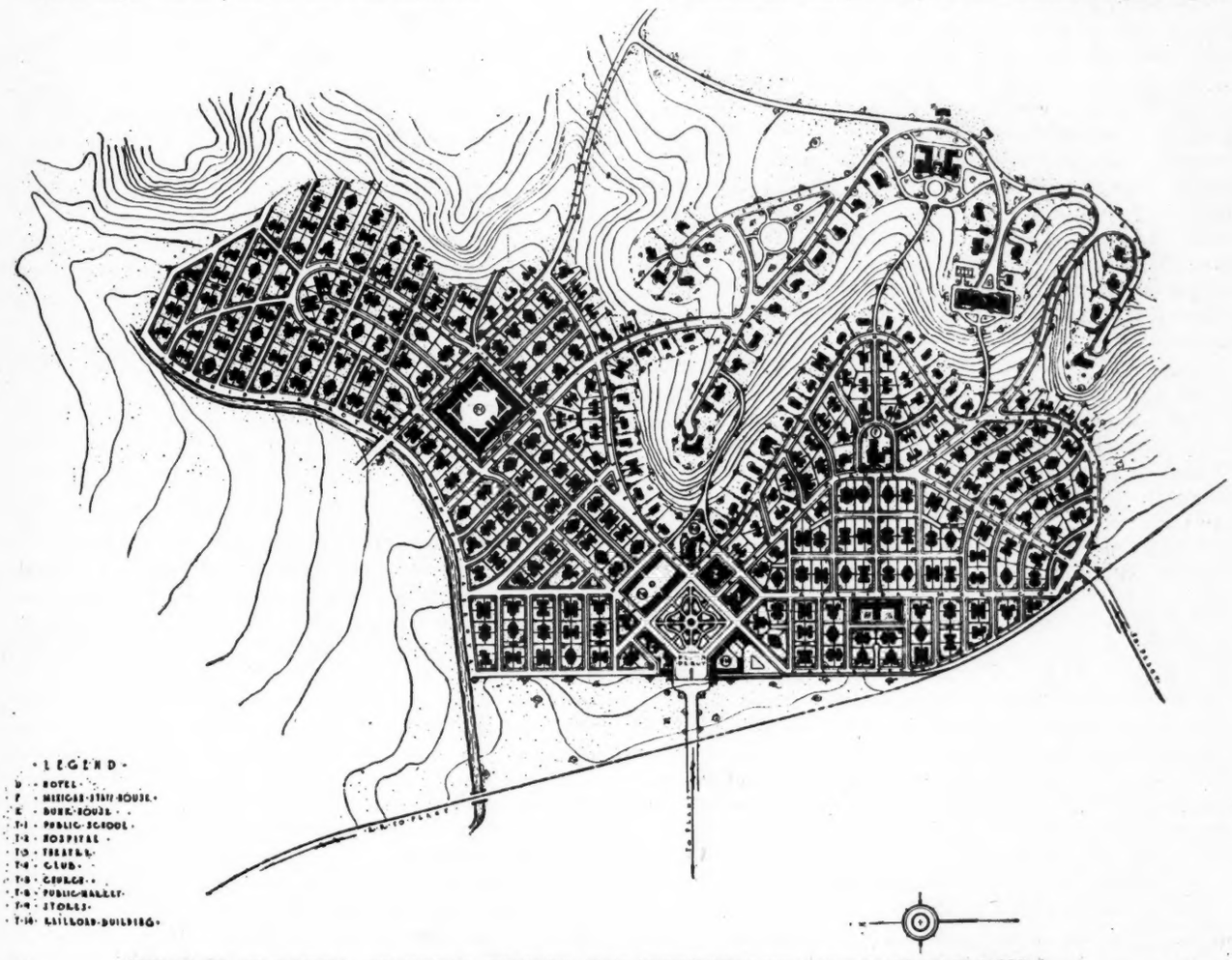
By Hjalmar E. Skougor*
New York City

SOME time ago the American Smelting & Refining Co. acquired the interests of the Madero family and others in the Compañía Carbonifera de Sabinas, S. A., a coal property situated at Rosita, State of Coahuila, Republic of Mexico. As acquired the underground and surface works were found to be of a type not in conformity with modern operating methods and efficient working conditions generally. The same remark applies to conveniences and accommodations for the personnel necessary for the operation.

With the improvements contemplated in the welfare program, the coal company's resident and general manager, G. P. Bartholomew, with the full co-operation of the directors of the smelting company, has endeavored to provide the Mexican miners and laborers with conveniences, accommodations and considerations commensurate with such improvements as are gradually being adopted by similar industries in the United States. In this, however, due account, of course, has been taken of local conditions and the racial and national characteristics of the employees.

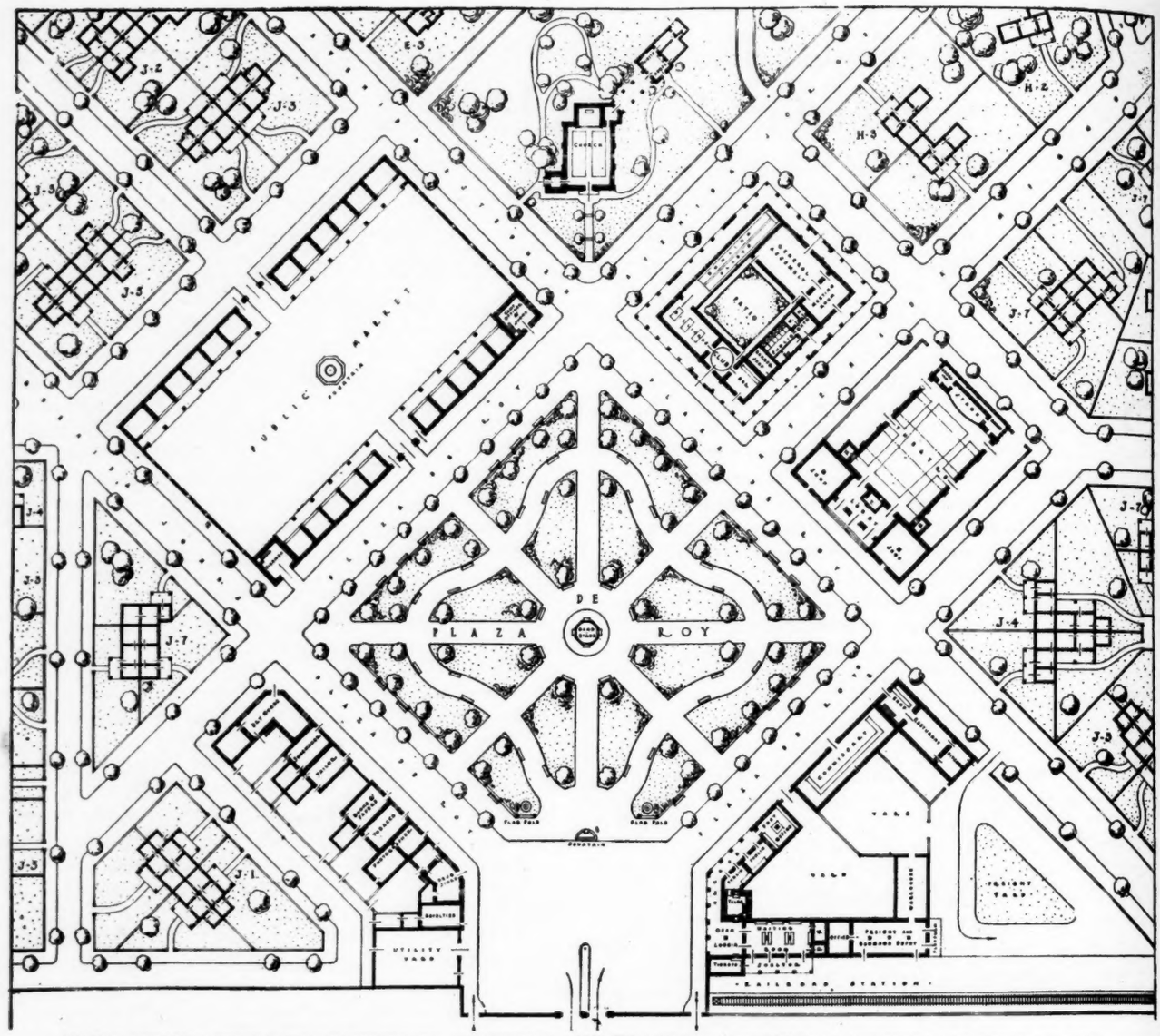
While the general subject of mine operation is not to be discussed here, it may be of interest in passing to

*Mr. Skougor was architect of the work described.



VILLAGE OF ROSITA, COAHUILA, MEXICO, FOR WORKMEN OF AMERICAN SMELTING & REFINING CO.'S COAL MINES

The town site is situated some 2,000 ft. due east of the plant at hte foot of the rugged edge of a large plain. On the top of the hill are situated staff quarters, the hospital and the hotel, the residences of the natives forming two wings from the center on the easy slopes below. Note how the lines are laid as far as possible to accord with the irregular topography and at the same time so as to radiate eastwardly from the Plaza de Roy



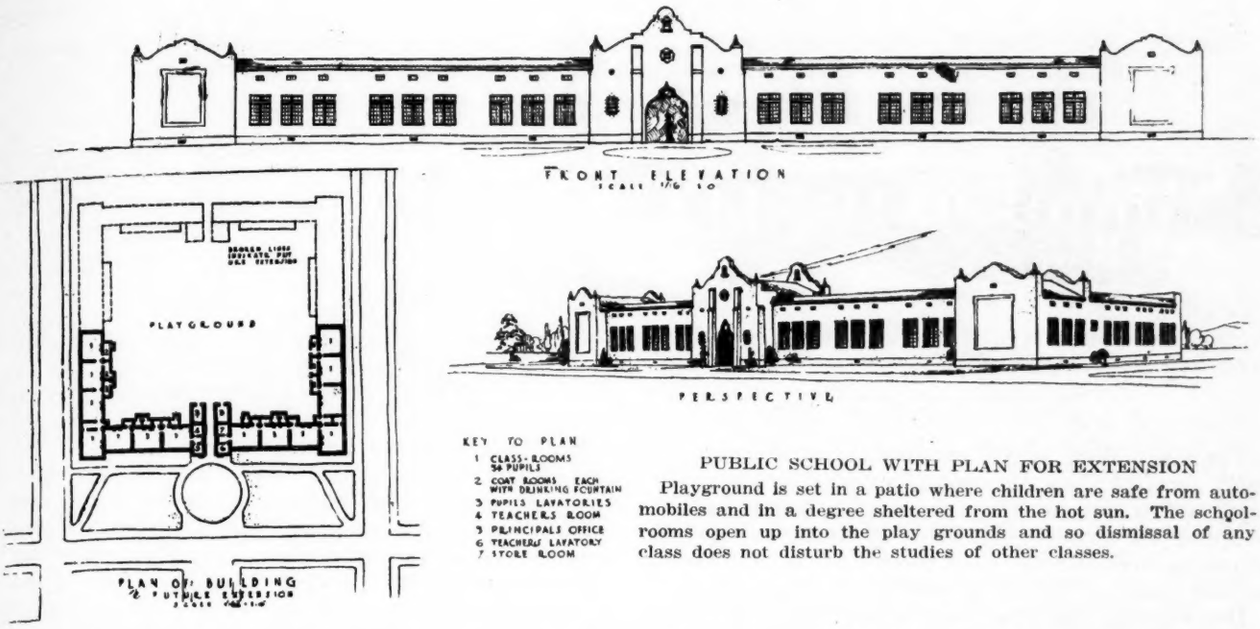
PLAZA DE ROY WITH ITS BANDSTAND, FOUNTAIN AND FLAGPOLES SERVES AS TOWN'S MEETING PLACE
Here are all the principal buildings, church, public market, club, public bath, theater, assembly room, commissary, post office, telegraph office and stores. In the northern half space is reserved for a dry-goods store, for shoemaking, tailoring, the sale of books and papers, for a tobacconist and photographer, for a drug store and for the sale of novelties.

state that the plan contemplated embraces a cycle of operations that will compare favorably with the most modern plants in this country in the way of labor-saving and safety appliances tending to foster the health and protection of the workmen. From two to three thousand tons of coal will be mined daily, crushed, washed and coked in byproduct ovens and the waste gases used as fuel for metallurgical purposes.

In order to provide suitable accommodation for the operating force a careful survey was made of the entire staff from common laborer to manager. The personnel necessary for the operation of this plant was found to be as follows:

Department	Americans	Mexicans
Administration	4	7
Accounting	5	24
Maintenance	8	125
Mining	4	835
Byproduct	5	135
Welfare	1	40
Hospital	4	7
	31	1,173
Grand total		1,204

For the accommodation of the above force the following types and numbers of houses are provided: One manager's residence; eight houses for department heads, accommodating the operating engineer, the chief surgeon, the mine superintendent, the chief accountant, the superintendent of the byproduct plant, the welfare superintendent, etc.; fourteen houses for division heads, accommodating the master mechanics, the chief draftsman, the chief electricians, the coal-washery superintendent, the assistant superintendent of the byproduct plant, the mine foreman and the power-house engineer; two hotels, one tc accommodate eighteen single American men and another to house twelve single Mexican men; ten residences for the occupation of American married clerks and foremen; twenty-two houses for married Mexican clerks and foremen; forty-five houses for Mexican mechanics (married), two families in each; 208 houses for married Mexican miners and laborers, four families in each, and twenty-one public toilets or comfort stations. The following public buildings also have been provided: A community building,



PUBLIC SCHOOL WITH PLAN FOR EXTENSION

Playground is set in a patio where children are safe from automobiles and in a degree sheltered from the hot sun. The schoolrooms open up into the play grounds and so dismissal of any class does not disturb the studies of other classes.

stores, theatre, club, public market, public school, hospital and church.

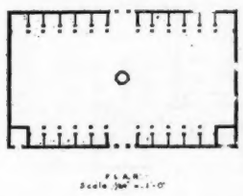
The climatic conditions prevailing in the Sabinas district may be compared with those of Texas, where in the winter season rather heavy and cold northerly winds are encountered, the temperature rarely reaching the freezing point and snow being practically unknown. Heavy rains occur during part of the spring and autumn and occasionally during some of the summer months. The fertility of the soil is a highly pleasing characteristic of this territory, as water in sparing quantities will readily cover the countryside with flowers. Corn, vegetables, trees and a large variety of flowers are easily grown.

In deciding upon the building material for the town site the natural development of building operations in this territory for the past fifty years was strictly adhered to. Adobe masonry, plastered, with wood shingle roofs, has by virtue of its endurance proved superior to any other modern building material, and for that reason was adopted. In places stone masonry has been used, as excellent building stone may be found within easy reach of the town site.

In this part of Mexico the natives are of rather an industrious disposition and adapt themselves readily to agricultural pursuits. This is evidenced by their diminutive flower and vegetable gardens reared among the huts and shanties which were found on the property when it was taken over by the American company.

The new town site will be situated some 2,000 ft. due east of the plant, at the foot of the rugged edge of a mesa land. Along the top are situated the staff quarters, the hospital and hotel, with the native quarters forming two wings from the center along the easy slopes below. The town is reached from the plant by a main highway leading directly into the plaza. This plaza is bordered on its four sides by the community building, theater, club, church, market and general stores. The main avenues radiate from this point with the public school lying in a northeasterly direction.

To the north the town is bordered by an arroyo which during the rainy season carries a considerable volume of water. To the east lies a slight hill beyond which future extensions may be accommodated. The main railroad to the plant borders the town site on the west.



PUBLIC MARKET FACING PLAZA ON NORTH EAST

The near tower is to be occupied by the firemen and the far one by the camp officer and judge. In the center of the market is a fountain as can be seen in the plan. On the left of the illustration is an enlargement of the entrance.

PUBLIC UTILITIES BUILDING WITH PART OF THE PLAZA IN THE FOREGROUND OF THE ILLUSTRATION
The righthand corner is the bakeshop and restaurant. Adjoining it to the right is the commissary. To the left of the gateway is the post office and a series of railroad offices. A wall screens the railroad from view, the road being a spur abruptly ending at the station, as may be seen in the town plan.

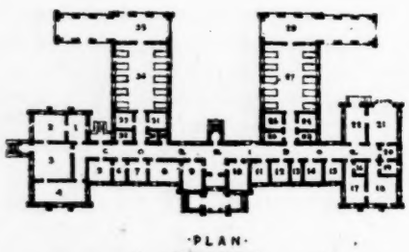
The mesa land, which terminates in four rugged knolls directly above the main town site, provides the ideal setting for the staff houses, hospital and hotel, affording an unobstructed view for thirty miles. It, of course, overlooks the town proper, yet is reached by an easy grade on foot or by vehicle.

Due consideration has been given to the inherent habits of the natives of the country. As a result the customary plaza and bandstand which invariably form the center of any community and constitute the general meeting place and point of amusement have been provided. Around this is situated such public buildings as have been previously mentioned.

The community building is located at the lower right-hand corner of the plaza and accommodates the railroad station with its baggage room, telegraph and post office, the company's commissary and a public restaurant with sleeping rooms upstairs. Adjoining this group of buildings will be found the theater, which has a seating capacity of 500 and at each corner of which, facing the plaza, has been provided two stores for general use.

The native club immediately adjoins the last-named building. It includes a bowling alley, poolroom, barber

PERSPECTIVE



PLAN

KEY TO PLAN

CLINIC
1 DRUG LABORATORY AND STORAGE
2 DENTAL, EYE AND EAR ROOM
3 WAITING ROOM
4 CONSULTATION ROOM

SERVICE
5 SERVANTS DINING ROOM
6 DIET KITCHEN
7 STORES
8 KITCHEN
9 STAFF DINING ROOM
10 HOSPITAL OFFICE

PRIVATE WARD SECTION
11 PRIVATE WARD
12 PRIVATE WARD
13 BATH ROOM PRIVATE WARD
14 PRIVATE WARD
15 PRIVATE WARD

OPERATING
16 DARK ROOM
17 X-RAY ROOM
18 DOCTORS ROOM
19 DOCTORS BATH
20 STERILIZING ROOM
21 OPERATING ROOM
22 EMERGENCY ROOM

WOMENS WARD
23 BATH ROOM
24 WOMENS TOILET
25 MEN ROOM
26 WOMENS BATH
27 WOMENS WARD
28 CONVALESCENT WOMENS PORCH

MENS WARD
29 CLOSET
30 SLOP SINK CLOSET
31 MENS BATH
32 TOILET
33 MENS TOILET
34 MENS WARD
35 CONVALESCENT MENS PORCH

COMPANIA CARBONIFERA DE SABINAS S.A.
HOSPITAL
ROSITA COAHUILA - MEXICO
WALMARE BOUDOIR
CONSULTING INDUSTRIAL ENGINEER
150 NASSAU ST. NEW YORK CITY

FROM THE HOSPITAL AN UNOBSTRUCTED VIEW FOR THIRTY MILES OVER A BROAD PLAIN IS OBTAINED

This building has rooms carefully grouped according to needs. Four rooms, comprising one section, house the clinic; five rooms in another section provide for the domestic service, five other rooms in a third section are private wards. Similarly the seven operating rooms are grouped together, one of them being for X-ray work and one for the sterlizing of instruments. There are six rooms for the accommodation of women patients and one more for the care of the men. Like all the rest of the buildings this is built in the interesting Mexican style with stepped fronts duly buttressed. Note the wide open rooms in the rear which serve as convalescence parlors for those whose return to home and industry draws near.

shop, large and small assembly rooms, as well as public baths, these latter being merely showers provided with hot and cold water. The church, which of course is for those of the Roman Catholic faith, is situated directly between the general manager's house and the east corner of the plaza. It adjoins the residence of the priest, which is connected to it by a cloister walk.

The public market is totally inclosed within a wall having two towers facing the plaza. One of these towers has been arranged to house the apparatus of the volunteer fire department, while the other at the opposite corner will house the camp manager on the ground floor and the "presidente," or local magistrate, in the upstairs apartment.

The main market is reached through a portal at both front and rear, opening into a central court, where the merchants will exhibit their wares for sale. A water fountain for man and beast is found in the center of the market proper.

For the accommodation of such permanent general merchandising establishments as a drug store, dry-goods store, cobbler's shop, etc., one continuous row of buildings is provided along the northwest side of the plaza. Some of these have been provided with living quarters in the second story.

For the education of the children of this community (numbering approximately 1,500 when the mines are working to full capacity) a public school 350 ft. square has been provided containing a total of twenty-eight school rooms, each of which accommodates fifty-six children. The school rooms are reached from the inside court through a hat and cloak room, while passage from room to room also is provided. The principal and teachers have a general room at the central entrance of the building.

It is intended at some later time to utilize the schoolhouse during the evening for safety lectures and educational courses designed for adults. Two rooms also have been equipped for manual training.

A modern and fully-equipped hospital is provided for in the plans. This will accommodate twenty natives in the public wards and also contain three private rooms. The hospital furthermore embraces a public clinic with an operating, sterilizing, and X-ray department.

A system of sanitary sewer mains is provided throughout the town site. The sewage from this system together with that from the plant proper is treated in a sewage disposal plant, the purified water from which will be used for agricultural purposes.

Factors in Stoker Design Which Must Be Satisfied if Dirty Coals Are To Be Burned Successfully

Undisturbed Combustion, Continuous Ash Discharge and Graduated Draft Pressure Necessary to Best Results in Burning Low-Grade Fuels—Agitation of Fuel Bed Usually Results in Clinker Formation

By Joseph Harrington
Chicago, Ill.

TO THOSE possessing a broad view of the national coal situation a trend is discernible toward the utilization of lower grades of fuel of all kinds. This arises not only from the approaching exhaustion of those mines which produce the highest grades of coal but from the desire to utilize fuels of lower cost and greater availability.

Every mine produces a certain amount of substance containing fuel value but which is too low in combustible constituents to render commercially profitable its shipment over great distances or its consumption in power plants using ordinary existing equipment. This refuse material is variously known as bone, laminated-coal, bug dust, machine cuttings, partings, etc. It consists ordinarily of carbonaceous material intermixed in various proportions and in various ways with clay or slate.

The coal measures undoubtedly were submerged at certain times during deposition, and silt or mud washing in from the sea formed a deposit of sediment that penetrated or intermingled to a certain depth with the coal below, eventually making the substances above referred to. It is difficult in many cases to separate mechanically the good from the bad, and there is a growing demand for some mechanical stoker that will satisfactorily handle such fuels.

To define more precisely what is meant by the word "satisfactorily," I would say that in general such a stoker must be capable of receiving this dirty fuel, of introducing it into the furnace, of allowing it to burn down to an ash which must be discharged without the formation of clinkers, or of side-wall accretions. The fuel must be burned at a sufficient rate to develop boiler capacities commensurate with modern requirements.

Much Heat and Fuel Agitation Form Clinker

My analysis of the means by which such a stoker should meet these requirements is as follows: In the first place, this grade of fuel, having a large percentage of ash-forming material, must be allowed to burn quietly on the grate surface until combustion is complete. More often than otherwise the ash will melt, or at least soften at a temperature considerably below those which normally develop in the furnace. Any exposure of the ash to such heat will, therefore, result in its fusion, and a disturbance of the fuel bed at such a time will bring adjacent sticky particles into contact.

This, in turn, results in these particles adhering and gathering others in their passage through the furnace until clinkers of serious and highly-detrimental size are formed. It is a fact too well known to require elaboration here that any stoker which develops high furnace temperatures and at the same time violently agitates the fuel bed will form clinkers so large that they will put the device out of business.

The advantage gained by allowing the fuel to burn

quietly to ash depends on the following phenomena: Starting with a layer of coal at rest upon a grate, ignition originates at the surface of the layer, but penetrates rapidly downward until the entire stratum is undergoing combustion. The air for this reaction, however, invariably comes up from below through the fuel-supporting element, and encounters first the burning fuel at the under surface of the layer. It is axiomatic that combustion proceeds where and in proportion to the amount of oxygen supplied; consequently in such a case combustion proceeds most rapidly at the bottom of the fire, and ash is first formed at that point.

Ash Should Not Be Mixed with Burning Coal

As the ash is formed it loses its capacity for absorbing oxygen, and the entering air simply passes up through the ash already in place until it encounters glowing carbon, which in turn is reduced to ash. Thus the process continues. In the course of time, therefore, the combustion will gradually travel from the bottom to the upper surface of the fuel, leaving ash behind it as it proceeds and stopping only with the layer at the top. It is obvious to anyone following this analysis that the ash as formed is kept both cool and porous by the inflowing air, and clinker cannot be formed unless this ash is mechanically lifted into the furnace, where it is subjected to the full heat of the fire. Therefore, to obtain best results, low-grade coals must be left undisturbed throughout the entire course of their combustion from ignition to ash.

The second requisite, complementary to the first, is that the ash must be discharged as rapidly as it is formed, in order that it may not accumulate in the furnace, with consequent inevitable projection upward into the high-temperature zone.

Much of the ash substance of low-grade fuel forms pasty clinker, even when burned under the foregoing conditions. Of necessity, the first layer formed, as above described, is in direct physical contact with the fuel-supporting element of the stoker, and highly-clinkerous coals will develop an ash that attaches itself to the grate surface. With the properly-designed stoker, this is not a fusing together of ash and iron, but a mere adhesion between the two that can be readily broken if mechanically disturbed. If, however, they are not disturbed, such adhesions continue until the opening or air gap in the grate surface is so completely closed that air can not pass through it.

Passage of Air Alone Saves the Grate

The air necessary for fuel combustion is a life-saver for the grate, and whenever such air is cut off, the grate surface will rapidly heat and burn out. It is vital, therefore, that the air spaces be kept clean. The third fundamental of proper stoker design, therefore, is that these air spaces must be continuously and automatically freed from all ash accumulations and kept open for the passage of air.

The fourth fundamental of stoker design is the suitable application or distribution of the air for combustion. It is obvious that the high-ash content offers a definite mechanical resistance to the flow of air. This resistance is too great for the draft pressures obtained in installations relying on natural draft, and combustion as a result largely ceases because of the inability of the air to force itself through the fuel bed after the ash has begun to form. A mere thinning down of the fuel bed does not suffice to relieve this condition because it results in irregular porosity, a leaky fire, and consequent low efficiency. Fuel-bed thicknesses must be maintained, and enough air pressure applied to overcome the resistance offered.

Modify Force of Draft to Suit Resistance

The method of applying air should be governed by the natural changes in a quiet fuel bed undergoing combustion. As the volatiles and carbons are burned out the fuel bed changes in thickness and in its resistance to air flow. It becomes necessary, therefore, in order to obtain the proper air distribution to divide such a grate surface or fuel bed into certain zones wherein the character of the resistance does not materially change, but which are of sufficient number to allow a graduated application of air pressure. We have, then, as the fourth fundamental the graduated application of forced draft.

The fifth condition, which will be thoroughly appreciated by many engineers, is the necessity of having a grate surface so designed as to prevent the finer particles of coal from filtering through, causing holes to develop in the fuel bed and keeping the hot, incandescent fire in direct contact with the grate surface. Many of the semi-waste products of the mine are naturally fine, and if any portion of them can run through an opening in the grate surface, the result is an early short-circuit of air with coincident loss of fuel into the pit, and a retardation of the combustion around such a short-circuit.

This causes three distinct kinds of loss: The actual loss of fuel through the hole, the excess air dilutions caused by the short-circuit, and the loss due to retarding combustion in the area immediately surrounding the hole.

The importance of each of these losses will appear to the thoughtful reader. I can only emphasize the fact that they must all be eliminated simultaneously in the stoker that is to burn successfully the lowest grade of coal. They are strictly fundamental and cannot be overlooked.

Important Details in Furnace Design

Utilization of low-grade coals involves a number of minor matters pertaining especially to machine design but which I will not dilate upon because of their secondary importance. They may be briefly summarized as follows: Conditions conducive to melting the ash must be reduced as far as possible through a furnace design that will keep the temperatures down to a reasonable degree.

The inevitable depreciation of the grate surface must be met by building up this part of the stoker from light elements, thoroughly cooled, and readily removable while the machine is in operation. All brickwork must be kept from physical contact with the hot fuel bed in order to avoid side-wall and bridge-wall accretions. Extra large ashpit accommodations must be provided. The fuel must be prepared in fairly uniform size, so that the good and bad particles may be evenly mixed, thus obtaining a homogeneous fuel bed.

The ability to utilize the lowest grades of coal will add tremendously to the fuel resources of the country and become a factor in our national conservation policy too important to be overlooked. All encouragement possible should be given to those who have attempted to solve the problem of efficiently utilizing low-grade fuel waste.

Kingston Plant Designs Its Locomotives to Suit Its Needs And Charges Them All in a Single Station

Gathering from Rooms Widely Separated, the Storage-Battery Locomotives Are All Brought to One Central Point for Charging —This Has Been Found Advisable Even Though Some of These Machines Must Travel Down Slopes and for a Mile or More

By Dever C. Ashmead
Wilkes-Barre, Pa.

IN INTRODUCING any new mechanical device or system many things, as a rule, have to be carefully thought out and studied before satisfactory results are obtained. Back in 1914 the Kingston Coal Co. introduced electric storage-battery locomotives into its mines. Prior to that time trolley locomotives and mules had been used for haulage purposes. When the country went to war and the men were called to their country's defense, mule drivers were hard to obtain. This led the coal company to introduce storage-battery locomotives to replace the mules.

The first locomotive placed in operation in this company's mines supplanted nineteen mules. After a year of experimentation the company purchased more of these machines, but it was not until some time after the war broke out that it procured the large number that it now operates.

At all of the mines of this company storage-battery locomotives are used, but the largest installation is located at mines Nos. 2 and 3. Shaft No. 2 has three locomotives, the Old Slope three, the Orchard vein one, and the No. 3 shaft has six, making a total of thirteen machines in all.

Company Makes All Its Own Locomotives

Five different makes of locomotives are being used, namely, General Electric, Westinghouse, Jeffrey, Ironton and the company's own make. All the locomotives now being installed are being built in the company's own shops. There are two reasons why this company is making its own machines rather than buying them from some one of the many manufacturers. The first is because a large force of machinists must be maintained to take care of regular repair work, and as at times there is not sufficient work of this nature to keep these men busy the company, rather than lay them off during slack times, employs them in making storage-battery locomotives.

The second reason is that the coal company has not been able to induce the manufacturers to construct the type of locomotive that it considers best adapted to the needs of the anthracite coal fields. An official of the Kingston Coal Co. tells me that the storage-battery locomotive manufacturers appear to think that the same design of machine that is successfully employed in the bituminous regions is entirely applicable in the anthracite fields. This is not so, as the mining conditions even in the flat beds of the anthracite region differ radically from those existing in the bituminous fields.

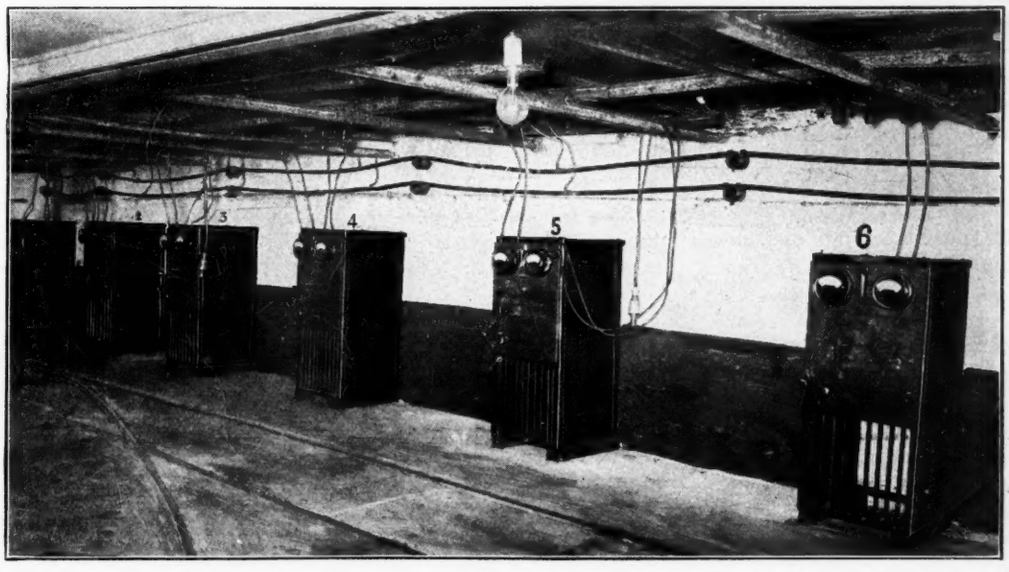
Travel Crooked and Narrow But High Roads

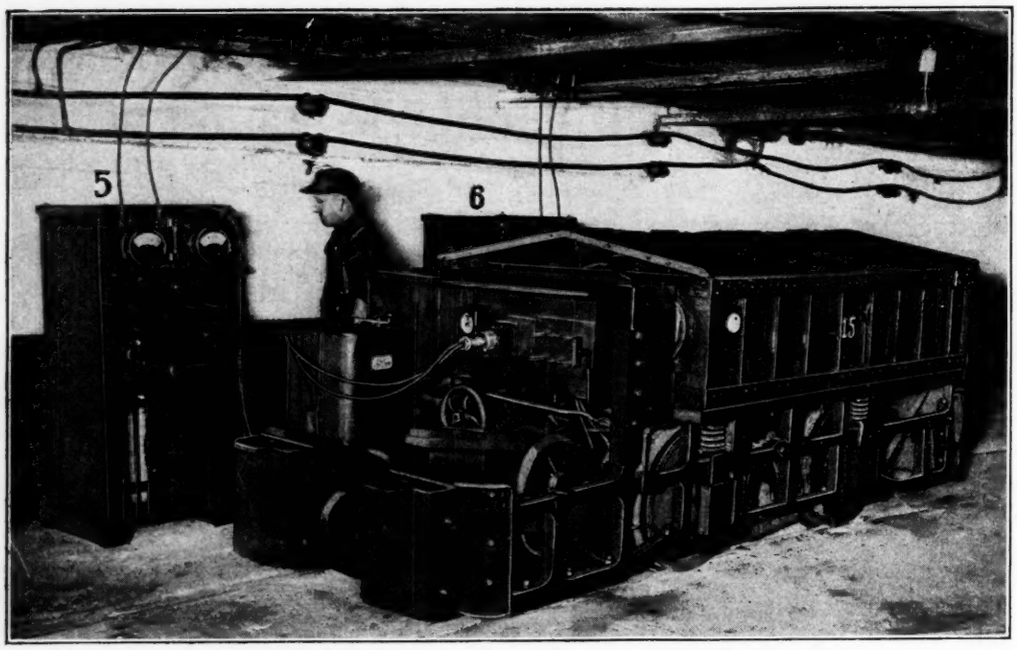
Developments in the anthracite region are all old, and the headings are not ordinarily as straight and as wide as they are in the bituminous fields. Room curves also are much sharper. The height of the headings usually is greater in anthracite than in bituminous mines. Consequently, instead of using a long low locomotive a much higher one can be employed, which must be much shorter than those used in the bituminous fields in order to permit the machines to make the turns into the rooms and chambers of an anthracite operation.

Mining in an anthracite mine is conducted at scat-

Central Charging Station

When a chargeman attends several stations he cannot give them effective supervision, for he cannot tell just when a battery will be fully charged. Overcharged and undercharged batteries are sure to result, the latter because with absentee charging it is necessary to charge batteries slowly. Hence the central station.





Charging a Battery

Charge room is at No. 3 shaft, R. A. vein. Locomotive is of Westinghouse make with a battery box specially designed to suit local needs and manufactured at the company's machine shop. Six locomotives can be charged at one time and room is provided for extending the station as fast as need dictates. A station such as this is far safer than the mule barn with bales of hay and wooden stalls.

tered points, two or three men working here, four men there and ten in another heading, etc. Thus the coal has to be gathered from places that are widely scattered. Comparatively few of these storage-battery machines take the coal to the shaft bottoms. On the contrary, they deliver it to the top of some underground plane or to some slope or to a main-line haulage locomotive. This means that it is difficult to bring these machines to any one point for charging.

Of course, when the locomotives are working on different levels in the mine it is difficult to assemble them in this manner. Even when they are operating on the same level it is inconvenient to collect them, as in many instances they would have to be either lowered down or hoisted up a slope. The scene of their daily operation may be as much as two miles from the shaft bottom.

Experimented with Local Charging Stations

With these considerations in mind the Kingston Coal Co. rather naturally decided to have each locomotive charged at a point near the workings in which it operated and did not try to bring them all to a central station for charging. After trying out this system for some time it found that it was not satisfactory, as the locomotives, when they were charged, did not receive the proper care. The man performing this work had to travel from one locomotive to another, and when he had six to look after in widely scattered portions of the mine none of them received proper treatment. He might fail to visit a machine at the proper time because it was too far away and accordingly he would trust to luck and fervently hope that everything would be all right. The results obtained were not satisfactory, and for this reason the coal company decided that it was necessary to make other arrangements.

One end of the mule stable was selected as the location for a chamber to serve as a central charging station and storage barn for the locomotives. Now, each night after completing their work the storage-battery machines are run to this charging station. Some are hoisted up slopes, some must travel more than a mile to be charged, but nevertheless all come to the same point each night. Here a man is always in attendance, and consequently the locomotives receive the proper oversight.

This charging station is quite complete and well arranged. All of the charging panels are on one side of the room. This permits the operator to watch them more carefuly than if a few were placed on each side of the station. The charging room is double-tracked and at present has a capacity for six locomotives as well as six charging panels, built by the Cutler-Hammer Manufacturing Co.

Although there is now a capacity for only six motors it would be exceedingly easy to enlarge the station to accommodate any number of machines. All that such an addition would entail would be the removal of the rear wall, separating the station from the mule barn, thus extending the charging space down the barn to any desired point.

Henry B. Fernald, an accountant of New York, discussed the sales tax on coal in opposing the sales tax before the Senate Finance committee. "Coal will be subject to the sales tax, with one or more turnovers before it reaches the miller or the baker, so that in some form or other the sales tax applicable to coal must be reflected in the cost of bread," he said. "But we cannot consider merely the tax on the sale of coal itself; we must consider the tax involved in every item which enters into the cost of coal. Railroad freight is an important item both in coal and wheat and we cannot expect railroad freight not to be increased if the railroad is having the cost to it of all the materials it uses increased even two to three per cent by the sales tax." He also referred to the cost of coal entering into the cost of steel rails, saying: "When we attempt to figure the increase of freight due to the sales tax on steel rails and the cost of rails increased by the sales tax on coal and coke and by the increase in freight on coal and ores, we get into an endless chain." Senator Smoot, author of the proposed tax, said the amount of tax entering into the manufacture of bread would be very small. F. R. Plumb, of Philadelphia, opponent of the tax, said the miller's flour cost would be increased by the increased taxes on things which he buys, including coal. The costs of the baker would be increased by the tax on coal for his ovens.

By Rapid Vibration, Caused by Electric Motor, Wire-Cloth Screen Is Made to Afford Large Capacity

Screen Uses Little Power Yet Vibrates 3,600 Times Per Minute--Passes Large Quantity of Material for Floor Space Occupied and Does Not Sway Building in Which It Is Housed, as Does Reciprocating Screen

SCREENING is perhaps today the major operation involved in the preparation of coal. In former years the revolving screen was quite popular. This device, however, consumed an excessive quantity of power and by its action appreciably increased the percentage of small coal produced. It accordingly gave way to the inclined oscillating screen. Recently the vibratory, or, as it is sometimes jocosely called, the "shimmying" screen, has made its appearance and is meeting with a fair degree of favor.

The Mitchell electric vibrating screen differs radically in construction, appearance and operation from those which operate by oscillation. It was developed at the plant of the Utah Copper Co., Garfield, Utah. The screening surface, which is wire cloth instead of perforated metal, is stretched transversely from a cast-iron frame. Below the screen and mounted upon the frame by a ball-and-socket joint is the "vibrator unit" containing a motor of 1 hp.

The shaft of this motor is extended both ways about one-fourth the transverse width of the screen. At each end this shaft carries a small hard-fiber cylindrical ball cage having radial bored holes of uniform diameter and depth. Into the holes upon one side of the ball cage at one end of the shaft and into corresponding holes on the opposite side of the ball cage on the other end of the shaft, loose fitting steel balls are inserted, each ball being restrained by and rolling in a suitable steel race. The whole mechanism—motor, shaft, fiber ball cages, balls and races—is inclosed within a dust- and water-proof casing. This is designated as the "vibrator unit."

It will be evident from the foregoing that when the motor is started the balls upon both ends of the shaft fly out against their respective races. As these balls on one end of the shaft are at 180 deg. from those on the other—that is, are upon opposite sides of the shaft—they throw the "vibrator unit" out of balance, so that both ends of the device describe small circles, the amplitude of which depends upon the speed of the motor.

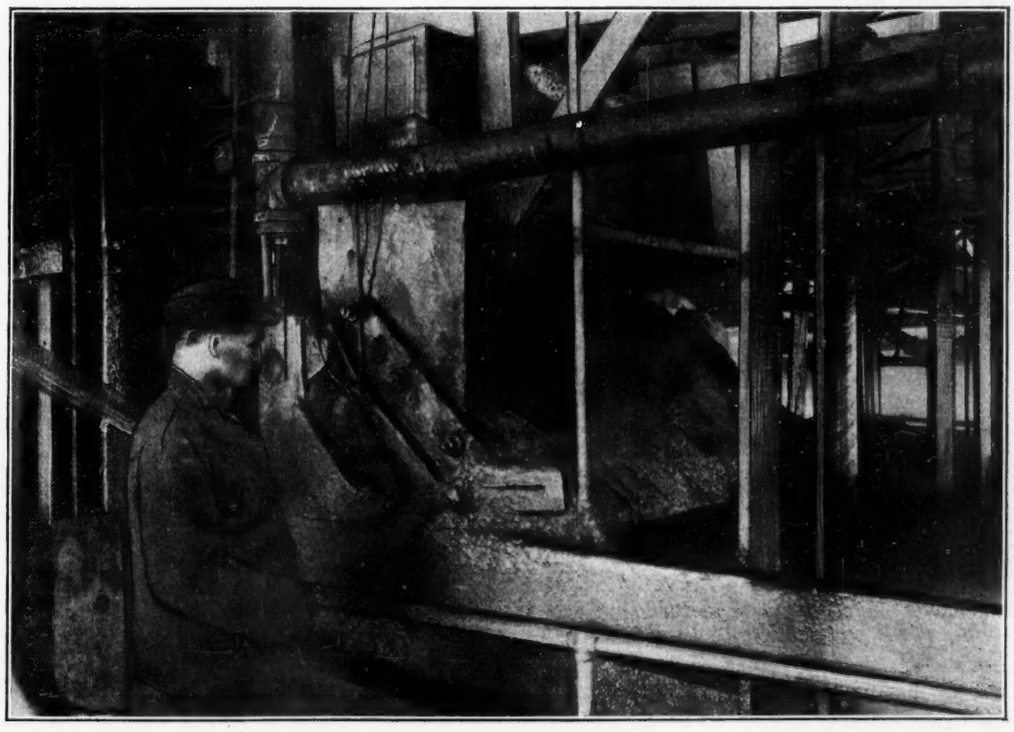
Upon each end of the motor housing plates are fastened to bear against the wire-cloth screen. Perhaps it should rather be said that the screen is stretched across the plates exactly as the strings of a violin or similar instrument are drawn taut over the bridge of a sounding board. With the violin, vibration of the string, transmitted through the bridge, causes vibration of the "belly" of the instrument. With the Mitchell screen, however, the "bridge" is vibrated by the motor and its movements in turn transmitted to the "string," which in this case is the screen cloth. To the screening surface, therefore, is imparted a small but rapid undulatory, sinusoidal or "shimmying" movement.

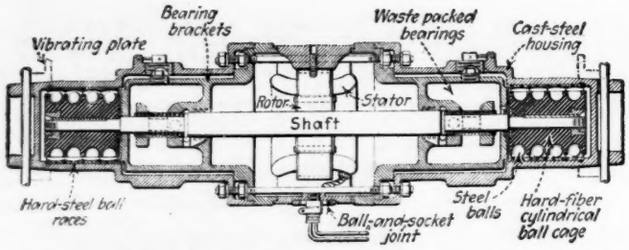
Vibration Gives Screen Large Capacity

In the screening surface each wire of the screen cloth has a circular movement of small amplitude, and in consequence of this motion the screen "clears itself" with extreme ease. Its capacity also is many times greater than that of an oscillating screen of the same area. As

Screening Fine Coal

As installed in the Mineral Spring breaker of the Lehigh Valley Coal Co. Screening capacity is hard to attain with fine wet coal because it has such a marked tendency to pack. This screen was invented and installed in the Arthur copper-concentrating plant by B. A. Mitchell, chief mechanical engineer of the Utah Copper Co.





VIBRATING MECHANISM BY WHICH AN UNDULATORY MOVEMENT IS IMPARTED TO THE SCREEN

This vibrating mechanism is attached to the screen frame at the center of the base by means of a ball-and-socket joint. Within the casing is an induction motor provided with a long shaft, on either end of which is a hard-fiber ball cage. One row (or two adjacent rows) of openings or pockets in the cage at one end of the shaft is supplied with balls, as is also the row (or rows) on the opposite side of the shaft at the other end. When the shaft is revolved rapidly the balls naturally fly out against the races encircling them, putting the entire mechanism symmetrically out of balance and causing the ends of the housing to wabble—that is, to describe small circles. Undulatory motion is thus transmitted through the vibrating plates or "bridges" to the screen surface. As the motor is completely incased within a cast-steel housing, it is not exposed to dust or dirt, which if admitted would greatly shorten its life.

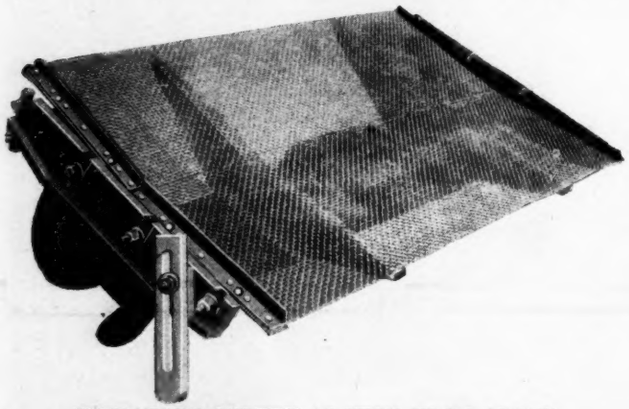
the motor and mechanism are incased watertight, the screen may be used with equal facility upon either wet or dry material. For the same reason the supply of lubricant for the bearings may be made large. In fact the driving motor ordinarily is oiled only once in three months.

Designed originally for use in the treatment of copper ore, this machine proved so efficient that about a year ago it was placed upon the market. Since that time it has been applied in several industries and is now in use in sizing a wide diversity of products. It attracted much attention in the coal industry, both anthracite and bituminous, and several of these machines have been installed and are being used for coal sizing.

Screen Relieves Crusher, Improves Coal

In bituminous operations these screens as a rule are installed in plants crushing coal preparatory to coking. The screens are so placed that the discharge from the crusher passes across them, the oversize being returned to the pulverizer for further reduction. In washeries the use of this device insures a feed to the jigs or tables that is at least approximately uniform in size, thus assuring a high efficiency to the washing units.

In some cases where crushers have been overloaded these screens by removing the small sizes from the crusher feed have relieved that machine of an appreciable burden. Such an installation not only enables the crushing rolls or mills to serve a large output but in large measure lessens the production of extremely fine material, which in some cases is objectionable. Coke is highly amenable to separation on the Mitchell screen. Many steel companies now use this device in preparing both breeze and domestic sizes.



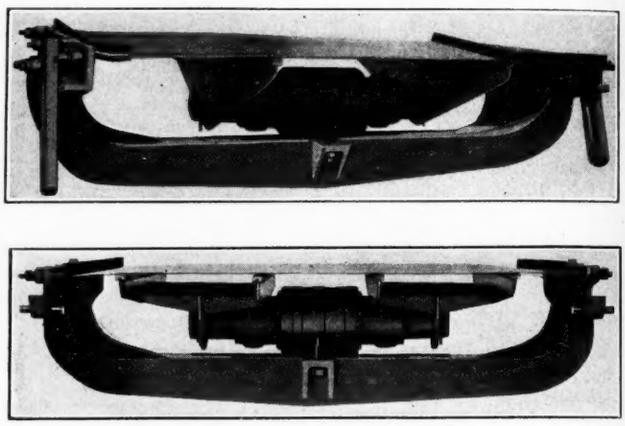
VIBRATORY SCREEN AS SEEN FROM ABOVE

Screen is set at an angle and the rapid vibration of the wire cloth prevents the coal from adhering to the wires and bridging over the spaces, as wet and even dry material is prone to do. The effect is as if a boy was engaged to belabor the screen and could do it sixty times a second. The work of the screen as vibrated by the motor, however, is more effective and not destructive to the wire cloth. Vibration also is distributed over the whole screening surface.

Will Save Much Space in Breaker Buildings

Only recently has the utilization of this screen been attempted in the anthracite field. One of the large producing companies, however, has installed one of these machines in one of its breakers and has planned a series of exhaustive experiments in order to determine what capacities can be developed. These tests have been under way for only a short time, but highly encouraging results have so far been obtained. If these trials prove as favorable as the tests thus far conducted would appear to indicate, they will mean much for anthracite preparation.

For example if this screen be adopted the size of breaker buildings can be greatly reduced, as the capacity of this screen per unit of area is many times that of the shakers now employed. Furthermore, power consumption will be lowered, and no mechanical apparatus whatever, outside of that under the screen, will be necessary. In view of these possible benefits much interest attaches to these tests, and the results achieved are being watched with more than usual interest.



TWO TYPES OF THE MITCHELL VIBRATING SCREEN

The motor is attached to its supporting frame by a steel strap, which does not in any way interfere with the shimmying of the motor casing by which the wire cloth is vibrated.

Capacities attained with this machine, of course, vary with the size of screen cloth used as well as with the composition of the coal treated. When equipped with a screen surface having ⅛-in. square openings and fed with a half-and-half mixture of undersize and oversize the machine will successfully handle a feed amounting to two tons per square foot of screening area per hour. The capacity of the device per square foot of screen area increases as the size of opening is enlarged, although possibly not in exact proportion.

This device is manufactured and sold by the Stimpson Equipment Co., of Salt Lake City, Utah.

Nova Scotia is being asked by the British Admiralty to quote lowest prices, f.o.b., and to state where the coal can be delivered. On behalf of the British Empire Steel Corporation, the Dominion Steel Co. has been negotiating with the Admiralty, which has been assured of what coal was needed in the event of a shortage. The Admiralty is sounding out the situation as a result of the miners' strike.

In Flotation Process Fine Coal Attaches Itself to Oil and Bubbles, Thus Floating Away with Froth

Gravitational Methods Formerly Were Used in Separating Coal From Its Impurities—It Is Now Proposed to Use Oil to Collect Coal and to Make a Froth to Which Coal Will Adhere

By E. G. Hill*
Pittsburgh, Pa.

ENGLISH journals note the reading of a paper on the cleaning of coal by froth flotation before the Society of Chemical Industry by Arnold F. Bury and Arthur Bucknell. From these reviews it would appear that the process, which has been such a complete success in the metal-mining industry, is now being successfully applied in England to the treatment of coal.

In writing the following description of the process it is assumed that many coal-mining readers are unfamiliar with the process, as it has been confined in this country to the treatment of metalliferous ores, except at a few plants where non-metallic materials, such as graphite, are being treated.

Powdered Coal Floats If Gently Deposited

It has long been known that certain minerals, when finely ground, tend to float on the surface of water, although they have specific gravities exceeding that of water. No doubt many have noticed how readily powdered coal will float if gently deposited on the surface of water.

For some time before the introduction of the "flotation" process this power of some minerals to float had for a long time attracted the attention of men engaged in treating ores, mainly because the floating particles constituted in most cases the valuable contents of the ore. Of course, in treatments which depended upon the greater specific gravity of the valuable material as a means of separating it from the worthless gangue, this caused considerable loss.

This tendency of metallic minerals (usually the sulphides) to float, and that of the gangue, or earthy materials, to be wetted by the water and sink, naturally led to the development of processes to utilize this principle. It also was observed that the metallic particles were more easily coated with oil than was the gangue.

Some Particles Disposed to Float in Oil

This last property especially appealed to the inventor, as he knew that the oil, being lighter than water, would float. So a process was evolved which consisted of mixing an ore with large amounts of oil and then allowing the oil and ore to fall onto water. The sulphides attached themselves to the oil, and the oil, being lighter than water, rose to the surface, carrying the sulphides with it. The sulphides, having much heavier specific gravities than water, naturally required relatively large amounts of oil to float them. This fact with other difficulties prevented the process from being a commercial success.

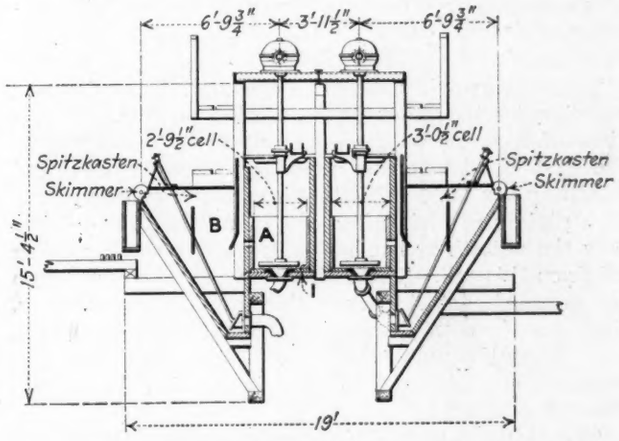
About this time (1902) another important principle was discovered. It was observed that in treating a ground ore which in the presence of acid gave off small bubbles of carbon dioxide, the gas bubbles would attach themselves to the sulphide particles and thus float them to the surface, while the gangue minerals would not be attached, so remained at the bottom.

At this period of the development of flotation there had been utilized all the basic principles of the modern process, namely: (1) Tendency of sulphides to float in water; (2) selective action of oil for sulphides; (3) tendency of sulphides to attach themselves to gas bubbles.

Process Utilizes All Three Principles

However, no process had been evolved combining all these factors. The next step was the development of such a process. It is interesting to note that the process was invented while trying to apply the principle of the selective action of oil. Oil, water and ore were mixed together in a mechanical agitator, the purpose of the agitator being to give a better coating of oil to the particles. At first a large amount of oil was used, but during the experiments the amount of oil was decreased until only a small amount was being used. As the oil was decreased, instead of an oil scum accumulating at the surface, as formerly, there appeared a mass of bubbles carrying sulphides. At this stage the sulphides were no longer held up by the buoyancy of the oil but by that of the gas bubbles, the gas in this case being air introduced by the agitation.

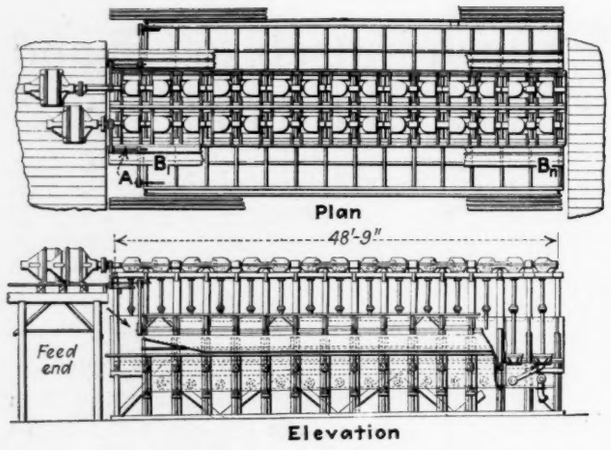
Thus the process developed into one wherein water, ground ore and a small amount of oil (less than 1 per cent of the amount of ore) were beaten together by an agitator. The sulphides received a thin coating of oil, were attached to the air bubbles and floated to the



AN ELEMENT IN A FLOTATION BATTERY

There is an agitating chamber (A) in which an impeller (I) mixes coal, water and oil together. The mixture goes into spitzkasten (B). It is a froth resembling beaten egg but black with particles of coal. The top of this mixture is skimmed off. What remains goes to another compartment (A).

*School of Mines, University of Pittsburgh.



BATTERIES OF FLOTATION ELEMENTS

The material taken off from the various compartments varies in composition. From the first few only the pure coal is taken. As the pulp flows through cell after cell the quality of the froth declines, but by varying the impeller speed and the frothing reagent various products can be taken off at the different spitzkasten.

surface while the gangue minerals were not oil-coated or attached to the bubbles and remained in the pulp. This proved to be a commercial success and further development has made it applicable to many minerals. The patent is held by the Minerals Separation Co.

Other processes have been evolved and the patenting of the various processes has led to a great deal of litigation which still continues. Most of the suits being brought against operators by the Minerals Separation Co. are for infringement of the above patent. At present the general statement might be made that an operator is held to be infringing upon the Minerals Separation patent if he utilizes violent agitation and less than 1 per cent oil.

Being Applied to Coal as Well as Metals

There has been much opposition to the paying of royalties to the owners of the above patent, the validity of the patent as applied to many processes being questioned. The Minerals Separation Co. is said to have been arbitrary in the matter of contracts, royalties, etc. Accordingly many operators have varied their practice so as to avoid the payment of the royalties. Many use more than 1 per cent of oil, while others employ machines that do not give violent agitation. The above process is the one referred to in the first paragraph of this article as being now utilized in the cleaning of coal.

The accompanying sketch shows an ordinary form of machine for the Minerals Separation process. It consists of a series of so-called cells. Each cell except the first consists of an agitating chamber (*A*) and a settling box (*B*). Agitation is accomplished by means of a rapidly revolving impeller (*I*). The first cell has only the agitation chamber (*A*), no froth being taken off from this cell. The coal, water and oil are fed into the compartment *A*, where they are beaten together. The pulp is then drawn into the next compartment, etc. Thus the pulp travels successively through each compartment (*A* and *B*), being finally discharged from the last compartment (*B*).

The froths taken off from compartments $B_{1\text{-}2\text{-}3}$ vary in composition. The first few compartments carry pure coal only. Naturally, as the pulp flows through the series of cells the froth gets poorer in quality. In ordinary ore concentration practice it is possible by varying the frothing reagents used, the impeller speed, etc., to take off various products at the different compartments designated *B*. If a froth is found to be too poor to be taken off as a concentrate it is returned to a cell that stands higher up in the series. It is probable that in the test referred to the first few cells deliver a froth carrying good coal, the next a froth carrying high-ash coal, and the last one is so poor that it must be returned to the preceding cells. The discharge is shale and very impure coal or bone.

Oils Divided Into Collectors and Frothers

The oils used are reported as being coal-tar, creosote, amyl-alcohol, soaps, etc. In the concentration of ores, the oils are divided into two groups, namely, collectors and frothers.

The collector is supposed to perform the function of coating the particles. The function of a frother is to alter the water so as to allow of the formation of a good froth. Some oils have the properties of both a collector and a frother. It is impossible to foretell with any accuracy how a certain oil will act with an ore until tests have been made. As a rule mixtures of oils are used, the best mixture being found by testing. Among the collector oils that have been used are coal-tar, coal-creosote, pine-tar, hardwood-tar, crude petroleum and many of its fractions. The amounts used are usually very small, being 1 or 2 lb. per ton of coal treated.

Among the frothers are pine-oil, pine-creosote, hardwood-creosote, turpentine, resin-oil and certain coal-tar fractions like phenol, cresol and tar acids.

The coke producer should note that many of the reagents used for frothers and collectors are byproducts of coking. For instance, coal-tar would be a cheap reagent at a byproduct coking plant, and there should be no objection to using it in rather large amount, as it would add its calorific value to the coal. This might be of advantage if it were found necessary to use more than 1 per cent of oil.

The froth is collected in tanks and the froth broken down, fine water sprays sometimes being employed. The mineral content settles to the bottom. Drying usually is necessary. In coal treatment where the cleaned coal is dried by filters and driers this operation has given much trouble, but this is true wherever fine wet coal is handled.

An article entitled "Froth Flotation for Cleaning Coal Being Tried Out in England," appearing on p. 497 of the issue of *Coal Age* of March 17, 1921, shows the results obtained as given by Bury and Bucknell in an address before the Society of Chemical Industry, of England.

Pyrite Tends to Float as Readily as Coal

Costs are said to be reasonable and several companies are reported to be using the process. A plant to treat 1,000 tons daily is now being erected in England to prepare coal for making metallurgical coke.

It will undoubtedly be some time before the process will be applied to American coals, as it is limited to materials not readily cleaned by the usual coal-washing machines, which depend on the relative specific gravities of the particles for their separating action. There are several obstacles to be overcome. Pyrite tends to float as readily as the coal. The draining and drying of the products also present difficulties. However, these are being overcome and undoubtedly will be eliminated.

There can be little doubt that the time will come when it will be applied to the reclaiming of fine coal from waste products and to the preparation of low-ash coal from high-ash coal. The process should appeal to metallurgical coke producers, especially if the sulphur be also reduced. The sulphur elimination probably will be a fairly hard problem, but when one considers that in ore concentration pyrite has been made to sink in a pulp while other minerals were floated, its solution would appear possible.

Experiments on some Pennsylvania coals are now being carried on in the laboratories of the School of Mines, University of Pittsburgh. Upon the completion of these tests we hope to be able to give more detailed information as to reagents, action of materials, etc.

Borehole Delivers Clean and Dry Sand to Locomotives in Shaft Mine

AT THE majority of bituminous-coal shafts sand for the locomotives is not efficiently handled. Where coal is brought out through drift entrances the necessary abrasive is supplied from a drying oven without appreciable loss of time on the part of the locomotive driver and without any special provision on the part of the management. Common practice at such operations is to locate the sand house in such position that the

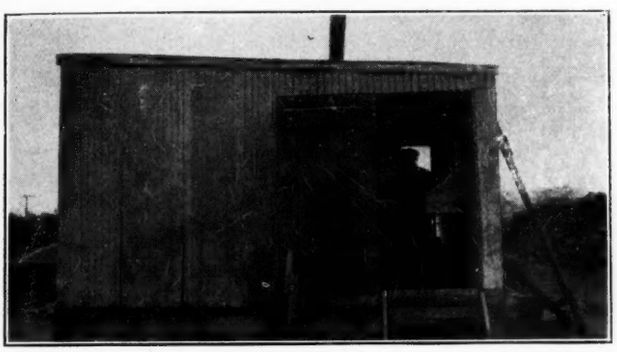


FIG. 1. ONE ROOM SHED SHELTERS DRYING OVEN

A cannon-ball stove skirted with a sheet-iron casing is all the equipment needed. The sand piles up within the casing until it dries, when it trickles down to a tin-lined container.

locomotive in switching may either pass through the drier building or close beside it.

Where the underground workings are accessible only through a shaft, the methods employed in transporting the sand to the point of use are many and varied. In Illinois a car specially constructed for the conveyance of this material often is employed. But no matter what the diversity of the practice in this respect, unless the sand is handled in the aggregate direct from the surface by way of a borehole, it is certain to pick up impurities and absorb moisture.

Transportation of sand from the surface to the shaft bottom becomes an operation of the simplest nature as well as one highly effective when a borehole has been drilled and a suitable diameter of iron pipe is used to deliver this material by direct descent. At the mine of the Panther Creek Co., near Springfield, Ill., may be found a good example of a cheap but effective sand drying and handling installation.

No cars need be used for its transportation and the drying process is merely a part-time job for one man. An inexpensive small one-room shed has been built to house the drying oven. This consists of a cannon-ball

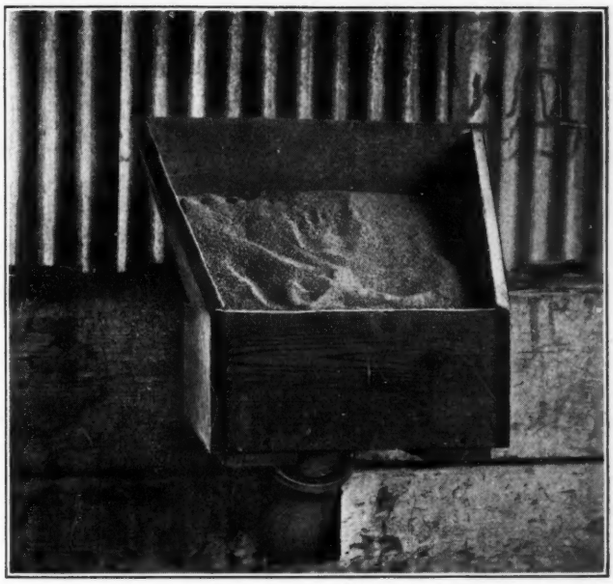


FIG. 2. DRIED SAND FED TO BOREHOLE THROUGH BOX

The pipe is not made vertical because if so set it is apt to buckle from expansion during the summer months.

stove equipped with a sheet-iron casing so that the sand in quantity is held close to the stove wall. As fast as it dries it sifts out at the bottom of the casing and into a tin-lined container. Fig. 1 shows this sand house.

When the sand has been dried it is shoveled into a small wooden hopper fitted with a funnel-shaped bottom that is connected to the pipe leading down the borehole. Once it is deposited in the box and started down the pipe there is no chance of its absorbing moisture or picking up dirt. As will be noticed in Fig. 2, the pipe connecting with the box is on an angle of 45 deg. until it reaches the vertical near ground level. This provision prevents the pipe from expanding and buckling during the summer months.

At the shaft bottom the pipe protrudes from the roof

FIG. 3. PIPE IS ALLOWED TO PROTRUDE FROM ROOF

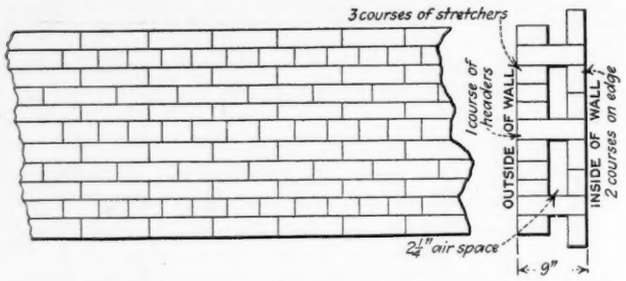
A small piece of sheet iron is operated as a valve by means of a lever. Sand is taken from the pipe only as needed. The locomotive driver fills up his sand bucket direct from the pipe.

for several feet, as is shown in Fig. 3. At this point a flanged fitting is connected to the main body of the line and forms the outlet. A channel is cut through the flange so that a small piece of sheeting may be operated as a valve by means of a lever. The device is now complete and requires no further attention. The sand is taken from the pipe only as it is needed. At such times the locomotive driver holds a bucket beneath the end of the pipe and operates the handle of the valve.

By this means the sand is delivered to its box in the locomotive dry and free from dirt, as should be the case if it is to serve its purpose most efficiently.

Suggestion for House Walls

REALIZING that a solid wall is likely to be wet and cold, especially if the brick should happen to be absorptive, Carl Scholz has suggested the following layup which he proposes to use in building the new town for the Raleigh-Wyoming Coal Co.: Three courses of



TO PREVENT BRICK WALL BEING DAMP

Solid walls of brick or concrete are apt to absorb large quantities of moisture and care should be taken to keep the water on the outside of the wall and leave an inner lining of dry material. There remains the difficulty of bonding. This shows one way in which the problem may be attacked.

brick on the outside wall correspond to two courses on the inside, and stretchers between these groups hold the two together and provide for air spaces. The water can pass through the stretchers, but the 2½-in. air space provides for the rapid drying of the brick.

What Is a Truly Automatic Substation?

COAL AGE is in in receipt of the following communication from Graham Bright, general engineer, Westinghouse Electric & Manufacturing Co.:

"In the May 12 issue of your publication an article appears 'From a Pittsburgh Correspondent.' It deals with a so-called 'automatic substation,' which has been in operation for two years. This correspondent confuses the remote-control substation with those which are truly automatic. The article which I contributed to the April 7 issue of your publication describes a substation of what is known as the fully automatic type, whereas that by a Pittsburgh correspondent in the May 12 issue details an installation which might more truly be termed a substation operating under remote control but embodying a few automatic features.

"The following is a list of the devices and provisions which are contained in the modern automatic substation and which do not exist in that at Cordova described in the the May 12 issue:

"(1) Thermostat relays on bearings. The description of the Cordova installation goes into the question of the bearing thermostat relay at great length but admits that this type of apparatus was not installed in that station, though it has been in operation for two years. (2) Provision for the automatic starting of the substation when—and only when—power is required. (3) Provision for the automatic shutdown of station when power is no longer needed.

"Nos. 2 and 3 are the most important features of the modern automatic substation and without them it cannot truly be called automatic. There are many hours during the day when a substation may not be required and there are also times when it is necessary to start a station on short notice. This can be done much more economically by automatic than by manual means. The Cordova station must be started and stopped by some person at a particular point, whereas the modern automatic substation is arranged so that it starts operation the moment that current is required and will operate only as long as necessary. This effects quite a saving in power and also in the wear and tear on the apparatus.

"(4) Provision for shifting the load when overload occurs. When a particularly heavy load comes on the Cordova station the automatic reclosing breaker will open. This may cause serious delays, especially where heavy trips are being started back in the mine. When this happens on a station similar to that of the Lincoln Coal Co., a resistance is automatically inserted in the feed lines, which shifts part of the load to one of the other stations and keeps the substation in question from becoming dangerously overloaded. This operation simply lowers the voltage a small amount and does not interfere with operations inside the mine. There are, however, many cases where the automatic reclosing breaker will provide satisfactory protection.

Safeguard Needed Against Continuous Overload

"(5) Provision for protection against a continuous overload. The direct-current breaker of an ordinary substation usually is set for about double the capacity of the generator. With the ordinary substation equipment it is quite possible to have an overload which is not sufficient to open the breaker but will nevertheless be destructive to the machine. The common time-element circuit breaker in the alternating-current side of the line will not take care of this situation. The modern automatic substation contains thermal relays that permit of a long-continued overload until the temperature of the machines reaches a certain predetermined value, whereupon the station will shut down and so remain until the machines cool down a definite amount. This operating feature is not obtained in ordinary remote-control substations.

"(6) Provision against low voltage. If the voltage of an alternating current continues low for any length of time, the truly automatic substation will shut down and remain thus until the voltage reaches a predetermined value which is safe for operation.

"(7) Provision for parallel operation of machines. The truly automatic substation where more than one machine is located is arranged so that the second machine will be called upon to operate only when the load is too great for the first or when trouble occurs in the first machine. The truly automatic substation contains lock-outs that prevent the apparatus from starting when such operation would be injurious to the machines.

"From the above it will be seen that there is a wide difference between the truly modern automatic substation and what might be called a remote-control substation. The protection given in these stations has, however, not been sufficient to make them popular, as appreciable risk is involved in their operation."

Problems of Operating Men

Edited by James T. Beard

Robbing Pillars with Machines

Safety in Robbing Pillars Has Changed the Practice of Mining from the Gob End That Affords Only Timber Protection to Working Under Coal Protection as Far as Practicable

READING the inquiry of J. D. Rogers, *Coal Age*, Apr. 28, p. 757, relating to the robbing of pillars with machines by starting the cut on the outby rib under the protection of solid coal, instead of mining from the gob side under timber protection calls attention to the dangers experienced in mining rib coal.

Present practice is striving to adopt methods of mining that consider, first of all, the safety of the workmen and, second, the largest possible extraction of coal in the best condition. An increased regard for safety has led to the more general adoption of cutting the rib under the protection of the solid coal, rather than from the gob side of the pillar.

Purpose of Setting Posts

Post timbering affords but slight protection at the best. The timbers are not supposed to support the entire weight of the overburden. Their purpose is merely to steady the action of the roof and give timely warning when it is necessary to pull stakes and find safer quarters.

The plan advocated by Mr. Rogers and shown in Fig. 2, where the rib cut is started on the outby side of the pillar, is the system we used when I was working in the Pittsburgh district, some time since, except that we did not drive the headings to the boundary and work back on the retreating system as he has stated.

Our practice then was to turn No. 1 room as soon as the headings were driven far enough for that purpose and other rooms were turned in succession as the headings were developed. The rooms were driven up until they reached the limit when the pillar in No. 1 room was cut through to the room adjoining. If I remember rightly, the Leith shaft, near Uniontown, operated by the H. C. Frick Coke Co., was worked on this plan, the rooms being turned as the entries advanced.

In time, however, trouble was experienced by gas accumulating on the gob in the worked-out portion and, in order to avoid the danger of hauling the coal past the gob section, the retreating system was adopted. The headings were driven to the boundary or limit of a panel where the first rooms were turned. All rooms were turned to the right and worked outby, these being called "right-hand rooms."

In this system, the track was laid along the left-hand straight rib, which afforded a good opportunity for the machine to start the cut on that rib, as stated by Mr. Rogers. About 90 per cent of the coal was taken out in this way under coal protection. I believe the system was also conservative in the use of timber.

Advantages and Disadvantages in Advancing and Retreating

Regarding the relative value of the advancing and retreating systems of mining, the latter presents one practical advantage that is often overlooked. It affords a constant supply of coal from each heading, as every room having a switch laid is sending out coal steadily until finished. The slump comes when the rooms are stopped and only the entry pillars and room stumps remain to be taken out, that work being both dangerous and difficult.

In the retreating system, the robbing of pillars does not begin until the first rooms on the inby end of the panel have reached the limit. The line of pillar work is kept straight by regulating the driving of the rooms so that each pillar is started back at regular intervals. New rooms are turned on a fixed schedule to make this possible.

When the retreating system is properly carried out it comes nearest to being the safest, most practical and least dangerous of all the systems. Moreover, it affords an opportunity to mine the heading pillars when the line of fracture across the rooms reaches them. I have mined pillar coal on the headings when the coal was as hard and firm as in driving a breast. This is only accomplished, however, by keeping a straight fracture line across the ends of the pillars.

The advancing system, while possessing the advantage of affording a good supply of coal in the early development of the headings, has the disadvantage of developing loose top, which makes dirty roads over which coal must be hauled for some time to come. Also, when gas accumulates on the gob it adds another danger.

Gans, Pa. R. W. Lightburn.

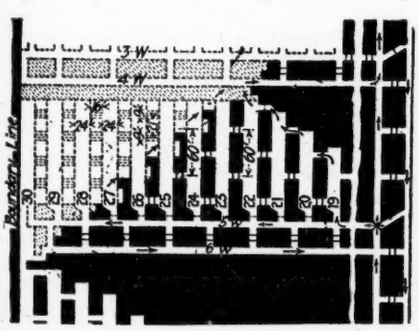


FIG. 1. MACHINE STARTS TO CUT ON INBY RIB OF PILLAR

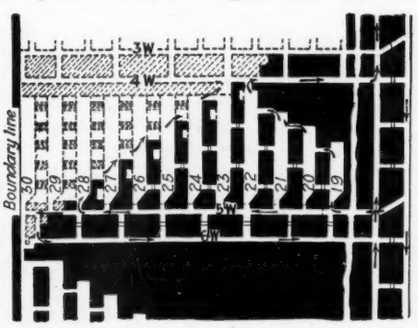


FIG. 2. MACHINE CUT STARTED ON OUTBY RIB OF PILLAR

ANOTHER LETTER

REFERRING to the question of whether a machine cut should be started on the outby rib, when drawing pillars in the retreating system, where the men will be protected by the solid coal; or on the inby rib or gob side where the men are protected only by the posts set behind them, let me say that my preference is the former.

When drawing pillars my practice has been to drive the butt headings to the boundary line, and turn a set of five or ten rooms, which are driven up to the air-course of the next pair of headings, leaving what we call a "back-heading pillar" of 30 to 40 ft. in thickness to protect the air-course.

Cutting the Pillar with Machine

A cut was then made through the pillar from the rib side to the gob side of the next adjoining room. When that was done, we fell back about ten yards and started another cut-through, from three to four yards in width. The stump of coal thus left was afterwards taken out with a pick by the miners. In my opinion, this was the safest and most economical system that could be used. It gave a higher percentage of coal extraction, with the least danger to the machine runners and the miners.

It is my belief that where the rib cut is started on the gob side of the pillar, not only will it be necessary to

move the gob each time a cut is to be made, but a curve will have to be laid in to that side before the cut can be started, which will greatly increase the cost of robbing. It would also be necessary to support the roof and lay the track across the width of the room, which would make the work more dangerous in case the roof started to work suddenly while the machine was cutting.

On the other hand, when cutting from the rib side next to the track, both the machinemen when making the cut and the miners when taking out the stump of coal left have but a short distance to travel to reach safety should the roof start to work.

In my opinion, this latter method of cutting the rib will produce a more uniform fall of roof in the abandoned workings and it will be possible to keep a fairly straight line of fracture. But, the falling roof will have a tendency to squeeze the back corners of the pillars and crush the coal. This would cause a considerable loss in the last end of the stump and make its recovery dangerous. FRED W. SAKON.

Johnstown, Pa.

THIRD LETTER

MY IDEA of cutting pillars with machine is to start the cut from the track close to the rib and cut through to the gob. Of the two plans shown in the figure in the issue of *Coal Age*, Apr. 28, p. 757, that in Fig. 2 is the method I would employ.

In my opinion, the method shown in Fig. 1, where the cut is started on the gob side of the pillar is wrong and unsafe. LESLIE, JOHNSON,
Assistant Foreman

David, Ky. Dudley Coal Co.

FOURTH LETTER

WHEN drawing pillars with machines it has always been my plan to keep the road well within the line of fracture as far as it is possible to do so. For this reason, I would adopt the method shown in Fig. 2, in preference to that in Fig 1, where the ends of the track will extend to or over the fracture line.

In each of the methods shown the projecting corner of the small stump of coal left after the machine has cut through a pillar, will undoubtedly be much crushed by the roof pressure and make the mining of that coal dangerous.

The amount of coal that can be recovered when drawing back pillars depends on the length of time we can keep men working in such places. They will stay no longer when they begin to feel that there is not open to them a safe "getaway."

There is, without doubt, a large amount of coal lost in this state, because of the contract between the miners and operators, which requires the track being laid in the center of the place. The distance of the track from the pillar gives the men less chance to reach safety when they observe the weight coming on that means a cave-in.

My opinion is that the position of the track in a working place is most important. When carried up the center of the room, as in this state, much labor is required to remove the gob when drawing back the pillars and this increases both the cost and the danger of the work. MACHINEMAN.

Linton, Ind.

[In the discussion of these two methods of starting the rib cut, safety is the first consideration and the complete extraction of the coal second. In cutting from the gob side (Fig. 1), the track is laid as close to the rib as in Fig. 2, and there is no extra work required to remove gob or lay track. The writer of the second letter appears to have missed this point.

In support of the plan of cutting from the gob side, it can be stated that greater care will then be taken to keep the necessary timber behind the men, in an effort to properly control the advance of the fracture line. The result will be that there will be less crushing action on the stumps left by the machine to be removed with the pick.

The condition presents little if any more danger than is common in working a longwall-retreating face where the pillars are cut with machines and two rows of posts are maintained behind the workmen. The point to be borne in mind is that the greater care given to this feature in properly controlling the fracture line, should afford the desired protection of the workmen and a more complete extraction of the coal.

Without doubt, there are conditions of roof that will not warrant the attempt to do this; and coal must be sacrificed by adopting the second method, bringing the fracture line across the exposed corners of the stumps crushing the coal and causing a greater loss in extraction.—EDITOR.]

Chief Factor in Americanization

Complexity of immigrants regarding American ideals. Need of an Americanization campaign appealing to an unshaken faith in the principles of righteousness and the practical application of the Golden Rule.

AFTER reading with deep interest the letter of Richard Bowen, *Coal Age*, Feb. 17, p. 319, in which he places much emphasis on the kind treatment of foreigners, I want to add a few words along that line as I am myself of foreign birth but now enjoy the privileges of American citizenship.

Coal mining more than any other one industry has received a large influx of foreign labor. This fact makes it apparent that a vigorous Americanization campaign is extremely necessary to offset the political influences thrown about the immigrant on his arrival in this country.

The present effort now carried on by industrial and labor organizations, having for their object the Americanization of this great class of foreign labor, is far from what can be rightly called a success in inspiring in the heart of the foreigner a right conception of the highest American ideals.

After a close study of the authorized doctrine of many of the "kindred societies" mentioned by Mr. Bowen as having a good influence on the immigrant, I am led to conclude that the average foreigner becomes greatly perplexed as to what really constitutes a true American citizen.

To my mind, there is but one solution to this great question and that was given by President Harding in one of his speeches prior to election. As nearly as I am able to quote his words, they were as follows:

> There never was a time when the world stood more in need than it does today of the consolation and reassurance that can only come through a firm religious faith. The present is a time of uncertainty, of weakened faith in the efficiency of our industrial institutions through an economic hypothesis of doctrine and dogma. In view of this, whatever our realm, let not our engrossment with those things that are concerned merely with the matter and mind distract us from giving proper attention to the things that relate to the spirit and soul.

These are heroic words, coming as they do from our foremost American citizen, who is now our President. The thought conveyed is that the present uncertainty and weakened faith in existing conditions is the result of a gradual drawing away from God's truth as revealed in the gospel of His Son.

There is but one way to dispel the present uncertainty and darkness, which leads to confusion and strife, and that is to bring back the true gospel that is the embodiment of American ideals and the soul and spirit of her institutions.

Today, we are observing a concerted action on the part of Capital to break the power of organized labor. We can well remember the time when there was no need for "collective bargaining," but personal liberty gave to every man an equal chance. Arbitration of labor disputes has given way to the selfish control of that organization by irresponsible leaders whose selfish purposes are now the dominant factor in its proceedings.

Such a condition has alienated the sympathy of the people and led to the demand for the enactment of laws requiring the compulsory arbitration of all industrial disputes. From outward appearances, both parties to these disputes profess to uphold American ideals and principles; but they fail to remember that those ideals and principles are expressed in the Golden Rule, which to them applies only to the other fellow.

History has taught us that unless a people or nation is devoted to a fundamental principle based on the Golden Rule it will fall. Let us strive, therefore, to make that principle a chief factor in the Americanization of the foreign element among us.

Staunton, Ill. HENRY BOCK.

Violations of Rules in Blasting Should Be Punished

Misunderstanding of mining laws often owing to their incorrect expression. Rules and regulations in blasting should be clear and any violation of them punished to insure a safe mine discipline.

MINING the coal before blasting is the subject of an inquiry, *Coal Age*, April 14, p. 676, drawing attention to a misleading expression in the Pennsylvania Bituminous Mine Law relating to the blasting of coal.

The question is asked, When is the coal properly mined, in the meaning of the law? It is explained, in Art. 4, Sec. 9 of the law, that a shot to be properly mined "shall be undercut, centercut, topcut or sheared, by pick or machine, and in any case the undercutting shall be as deep as the holes."

Use of Wrong Word in the Laws

The term "undercutting" is misleading and its meaning easily misunderstood. As stated in the reply to the inquiry, it is probable that the word should be *cutting*, instead of "undercutting." The reference is clearly to the cut being made parallel to the stratification, whether in the top, center or bottom of the seam.

To shear the coal, in preparing a shot for blasting, is to make the cutting at right angles to the bedding plane or floor of the seam. It will be noticed that, in the second paragraph of the same section, a shot to be properly mined, in a five- or six-foot seam, in an entry less than ten feet wide must be sheared on one side as deep as the undercut.

While laws are necessary to hold miners in restraint and prevent carelessness in preparing a shot, the wording of the law should be clear and admit of but one meaning, which will allow of no excuse that the law was misunderstood. Any violation of the law or the rules regulating the blasting of coal should be promptly punished.

Disregard of the Mining Law by Miners in Indiana

In this state, in the mining of the No. 5 and No. 6 seams, where pickwork is general, it is my belief that not five per cent of the shots prepared by miners conform to the law.

This is a strong statement; but we have had many fatal accidents from windy shots, by which I mean shots that have blown their tamping and the force of the charge has been expended on the air instead of breaking down the coal. The result is that a more or less local explosion of dust is caused and men are burned or killed.

One would think that the prevailng idea among the pick miners in these seams must be, as the old saying goes, "When in Rome, do as the Romans do." Anyone who may be inclined to take exception to this assertion can easily verify it, as there is ample opportunity to observe the conditions that exist in the two seams mentioned.

In this connection I am reminded of what happened to the miner, twenty years ago, in the North of England where the coal was required to be properly mined according to the law and colliery rules. Any violation caused the man to be fined or discharged. Even there, however an instance attracted my attention, which I could not regard in any other light than as being a violation of the law on the part of the management.

Going to my work one morning and crossing the heapstead (tipple) I observed a large chunk of coal that had been bound together in order to prevent its falling apart in transportation. If my memory serves me, this large chunk was to be sent to the Glasgow Exposition.

It was evident that the coal had not been properly mined, but the shot was well gaged and placed in a manner to produce this exhibit, even though in so doing the law was violated. Passing on, I reflected, What must be the moral effect of this act of the management on the miners? Does it not tend to close the eyes of the miners to violations of the law and will not disaster follow as the result?

My conclusion is, that any act of the management or officials of large collieries that is clearly in violation of laws, rules and regulations is the undoing of many good laws intended to safeguard the work of mining.

Again, it is often true that too many of our laws do not discriminate between gaseous and non-gaseous mines; but are made to apply alike to all mines, whether or not they generate gas. The result is to tempt men working in non-gaseous mines to disregard the law in respect to taking certain precautions and this cannot fail to have a serious moral effect on the work in other mines where gas is generated and where the law's requirements are none too strict.

Linton, Ind. W. H. Luxton.

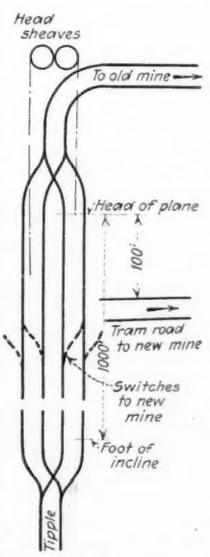
Inquiries Of General Interest

Gravity Plane to Serve Two Mines

A New Mine Being Opened at a Point 100 Ft. Below Another Mine Operating an Incline for Lowering Its Coal to the Tipple. A Plan Is Desired by Which the Incline Will Serve Both Mines

KINDLY permit me to submit a proposition that has puzzled us to know how to solve successfully. We have been and are still operating a drift mine opening on a hillside. The output of the mine is lowered over an incline, or gravity plane, 1,100 ft. to the tipple.

Recently, another opening has been made at a point 100 ft. lower down the hill. In order to save building another plane, it has occurred to us that we should be able to utilize the one now serving the upper mine, by adopting some arrangement that would enable it to serve both mines.



GRAVITY PLANE

This is the problem with which we have wrestled for a short time, without being able to devise a scheme by which it can be worked out. Believing that some of the practical readers of *Coal Age* can help us, we desire to ask that the proposition be submitted to readers that we may have the benefit of their ideas and suggestions.

As shown in the accompanying diagram, the rope passes over two headsheaves located at the level of the upper mine. There are two tracks extending the entire length of the incline, and these are joined by switches at the top and bottom of the plane. This enables the ascending empties to pass the descending loaded cars safely.

The system has worked well and we shall very much appreciate any assistance that can be given, or information of a similar system or arrangement installed elsewhere. Superintendent.

———, Pa.

We are pleased to submit this proposition to the practical readers of *Coal Age*, who are invited to give their ideas of the practicability of utilizing the same incline to serve both mines and any suggestions as to how this can be done.

In the present arrangement, it is clear that the same length of rope now used to lower the loads and hoist the empties belonging to the upper mine will not serve to perform the same service for an opening lower down the hill. As far as the rope is concerned, it will be necessary to provide an extra length, reaching from the upper landing to the landing at the new-mine level.

Assuming a trip of loaded cars has just been lowered from the upper mine to the tipple and an empty trip has reached the upper landing, and it is desired to lower a trip from the landing at the new mine, it will first be necessary to couple on the extra length of rope lying at the side of the track and reaching from the upper landing to the new-mine level. The lengthened rope will then be what is required to lower and hoist cars at that level.

Adjusting the length of rope, however, is the simplest part of the problem. The chief trouble will be to devise a suitable arrangement for handling the cars as they leave and arrive at the level of the new mine. There must be some method employed for pulling them over the knuckle, which is necessary before they can be unhooked from the hoisting rope or cable.

The only scheme that suggests itself at present is to install a switch in each track on the incline, a short distance below the new landing, as indicated by the dotted lines in the figure. At this point the car or trip might be securely blocked, by a suitable device for that purpose, while an auxiliary rope operated from the new landing is being attached, whereby the cars can be pulled through the switch and over a knuckle onto that landing, after uncoupling the main rope, which must be done before the cars take the switch.

Any arrangement of this kind would require excavating a level space in the hillside at the new landing. This excavation would extend under the incline and provide suitable trackroom for handling the cars as they come from either track of the plane.

The entire plan would have to be worked out by a competent engineer and extra precautions taken in the handling of the cars to and from each landing, which would require the services of a good headsman at each landing and an efficient signal system, in order to avoid accidents. We shall be glad to hear from others.

Examination Questions Answered

Examination, Mine Foremen and Firebosses, Bituminous (Pa.), April 5-8, 1921

(Selected Questions)

QUESTION — *What instructions would you give to the cutter and scraper of a mining machine for their safety?*

ANSWER — Both the machine runner and his helper should be warned of possible danger of shock by the grounding of the current of an electric coal-cutting machine. The machine runner must take every precaution to avoid this condition. He must also see that his helper keeps out of the way and performs his work in a manner that he will not be in danger of being caught in the teeth of the cutterbar, or come in contact with any portion of the machine. Care must be taken to avoid damage to the insulation of the power cable when operating or moving the machine from place to place. Special attention must be given to the condition of the roof above the machine and if it is necessary to remove any timbers to allow the machine to pass, these must be reset as quickly as possible.

QUESTION — *What special attention should a mine foreman give in the drawing of room and entry pillars?*

ANSWER — In drawing pillars, the foreman must employ only experienced men for that work. It is important to keep the line of pillar work as nearly uniformly straight as possible, in order to avoid an excessive pressure on the end of any of the pillars. The foreman should see that the men keep the necessary timbers behind them to insure their safety. He should examine closely for any slips in the room and instruct the men to do the same. Where there is any danger of gas collecting on the falls, only safety lamps should be used by the men. In any case, the fireboss should examine the top of the falls for gas, each day, to see that there is no accumulation at that point. Particular attention must be given to the circulation of air around the pillars, and the men should be cautioned to use extra care in approaching a crosscut in the pillar. The work of drawing pillars should be continued without cessation in order to maintain a uniform pressure and avoid unduly crushing the coal, which would render the work more dangerous.

QUESTION — *What maps should be kept at the mine? What data should be shown thereon; and how often should an extension be made on said map? If the scale was 100 ft. per in. and the main headings on said map measured 6 ft., what would be their entire length?*

ANSWER — Blueprint copies of the mine map should always be available at the mine for inspection. The mine map should show all openings, excavations, shafts, slopes, drifts, tunnels, planes, entries, airways, roads and travelingways, together with all worked out and abandoned territories and the relation and proximity of the workings to adjoining mines or coal properties. The map should show by arrows the circulation of the air currents throughout the mines, together with the location of all doors, air bridges, regulators, stoppings, crosscuts and breakthroughs in rooms and entries. In inclined or irregular seams the elevation of the coal should be shown at different points throughout the mine.

In addition to the underground workings, the mine map should show all surface improvements, buildings, property lines and natural features, such as river courses, lakes and ponds, together with surface elevations. The location of all boreholes should be accurately given, together with the depth and thickness of the coal in each hole.

The map should show the direction of the meridian and the scale and be extended at least every six months.

For a scale of 100 ft. per in., a measurement of 6 ft. on the mine map would indicate $6 \times 12 \times 100 = 7{,}200$ ft. in length in the mine.

QUESTION — *What precautions would you adopt to reduce to a minimum the production and distribution of coal dust in a mine?*

ANSWER — All fine coal and slack should be loaded out of the mine in dustproof cars and the working face kept clear of such accumulation. All roads and travelingways should be cleaned at regular intervals. Where blasting is performed strict regulations should be made and enforced to prevent the excessive use of powder and avoid the unnecessary shattering of the coal. Conditions at the coal face should be carefully studied with a view to taking out the coal in a manner that will reduce the fine coal and slack to a minimum. The advisability of sprinkling the coal face and roadways should be carefully considered.

QUESTION — *When and where should timber be drawn and what instructions should be given the workmen?*

ANSWER — All timber should be drawn as pillars are being taken out so as to permit the roof to fall in the waste and abandoned portions of the mine, where no timber should be left standing. Only experienced workmen should be employed to draw timber, and they should be instructed to use a chain-puller for that purpose and take every precaution to avoid being caught by a fall of roof. Where a post cannot be drawn with safety to the men, a hole should be bored in the post and a short stick of dynamite used to destroy the timber and allow the roof to fall.

QUESTION—*What parts in the hoisting plant should be examined and how often to insure their being in a safe condition, in shaft openings?*

ANSWER — All hoisting ropes, cages, safety catches, safety gates, winding drums, brakes and other appliances used in hoisting, including the cage-wings or keeps at each landing, in a shaft opening, should be carefully examined at regular intervals. The more important parts, such as ropes, safety catches, and cages should be examined at least once a day to see that they are in safe condition.

Further Fields Inviting Expansion of Overseas Coal Trade of the United States*

Markets Opened Up in Europe and South America by the War Have Only Been Tapped—Spain, Turkey and Switzerland in Receptive Mood Toward American Product

By Dr. Henry M. Payne†

PETROLEUM is rapidly superseding coal in Mexico, even for railroad fuel distant from centers of production. There is one gas coal mine at Rio Escondido, Coahuila, which has produced 10,000 tons per month. Most of the output is used at Monterey and Saltillo and on the railroads to the north.

From 1900-1910 the British supplied about 25 per cent of the coal used. In 1912-1913 the importations were: Germany, 9,594 tons; Australia, 26,801 tons; Canada, 2,999 tons; United States, 364,536 tons; Great Britain, 31,978 tons, and Japan, 14,620 tons.

Before the development of petroleum, the British coal was briquetted and burned principally by British-owned railways. The dredge Mexico, permanently employed in Salina Cruz harbor, uses Pocahontas coal. The United States is the normal source of all coal imported for bunker purposes.

Until 1914 the west coast ports kept about 2,000 tons stacked for bunkering purposes. This came irregularly from the Pocahontas field and from Wales and Australia. At present only about 600 tons are kept in stock, coming principally from the mines in Coahuila. This native coal is reported as about 16 per cent less efficient than Pocahontas coal. It also is unloaded from railroad cars one-quarter mile inland and must be hauled to the quay. Eighty per cent of the shipping touching these ports uses fuel oil.

The consumption of coal in the Netherlands is 10 per cent gas coal, 65 per cent steam coal, and 25 per cent anthracite coal and briquets. Screened coal is preferred, as only 12½ per cent of the industrial plants have automatic stoker equipment.

The railroad fuel situation has been so acute that any kind of coal, including lignite and briquets, has been used. The normal requirements are one-third high-volatile, and two-thirds low-volatile. Supplies are usually obtained in the summer months and stored for winter.

Importations in tons of the last four years have been as follows:

	Germany	England	Belgium	U. S. and Canada
April 1, 1916—April 1, 1917...	3,377,533	1,295,722	619,439	.....
April 1, 1917—April 1, 1918...	2,701,110	201,012	119,877	.....
April 1, 1918—April 1, 1919...	735,000	92,376	35,680	84,491
April 1, 1919—April 1, 1920...	1,230,000	411,200	1,293,000	694,400

It can thus be seen that the United States has not until recently been a material source of supply, but it is stated that if prices and quality can compete with British coal, a permanent footing may be had in the Netherlands market.

The gas plants, which consume 50 per cent of the gas coal imported, are of a widely diversified type of equipment, accustomed to using the high sulphur coal from Belgium, and averaging from 5 to 5.6 cu.ft. of gas per pound of coal. The manufacture of byproducts is extensively developed and high fusing point of ash is a decided inducement in the purchase of coal.

In 1916 the government assumed control of coal distribution both for industrial and domestic purposes. Since the armistice, importing firms have been allowed to import coal, but a license is required for the transportation of coal in the Netherlands, which license must be obtained from the Coal Bureau. The government, therefore, still retains control.

The unloading equipment at the ports of Amsterdam and Rotterdam is excellent. Ships not only unload and leave without demurrage but usually with despatch. These ports are logical transshipment points for goods both to and from Germany and Switzerland, and to some extent Czecho-Slovakia and Austria.

American Coal Gained Ascendant in Norway in 1920

The large consumers are usually of sound financial standing and handle their purchases direct. Co-operative some irresponsible American exporter does not ruin the reputation of American business methods and American coal by chicanery, fraud and substitution.

The normal requirements of Norway are for 80 per cent steam and 20 per cent gas coal, screened preferred. Few mechanical stokers are used, as there are no smoke ordinances, and only coke and tar are sold as gas plant by-products.

Storage facilities are such that with care, sufficient supply for winter can be carried by stocking during the late summer months. The greatest demand is for high-grade coal at the breaking up of ice in the spring.

The United States was not until recently the source of any considerbale quantity of coal, but inability to obtain it elsewhere has opened up a very promising export field, provided, as has so unfortunately occurred in many cases, or collective buying is being introduced with a view to encouraging competition in bids from large concerns, by virtue of the tonnage involved.

The Norwegian harbors are well equipped with unloading facilities for handling 500-600 tons per day and at a few harbors 1,000 tons per day. Return cargoes of iron and other ores, paving stone, saltpeter, canned fish, fish meal, timber, and paper pulp are offered. The bulk of these goods, however, go to England and other European countries, from which other return cargoes are obtained.

In 1919 Norway procured coal from the United States, Canada and Australia. During 1920 the coal imports from the United States exceeded those from all other countries.

Turkey a Growing Market for American Coal

Prior to the war the coal market of Constantinople was controlled by Great Britain. Cardiff coal was well known and in demand. Newcastle, Belgian, German and Russian coals also had been used intermittently, but were never given serious consideration. Turkish coal is of a poor grade and is not acceptable for bunkering purposes on account of its high sulphur content. The earlier Turkish mines produced principally lignite, although the veins reached by sinking the shafts deeper have been somewhat better.

Soon after the armistice when England imposed an embargo, local importers began to look to America for coal. Pocahontas screened coal has since become better and more favorably known, although in one or two instances substitutions have been made which reflect seriously on American coal and American ethics.

At the time this information was obtained (November, 1920) American coal was costing from $35 to $42 per ton c.i.f. Constantinople, and about 10,000 tons per month were being consumed. Washed Turkish coal costs about $35 per ton. American coal, however, compares so favorably with English coal, and is so superior to Turkish coal, that con-

*The first instalment of this article, entitled "American Export Possibilities Denoted by Sidelights on the Coal Situation in Foreign Countries," appeared in *Coal Age* April 14.

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sumers are gradually ordering more and more American coal through local importers and importing agencies. They state that Turkish coal contains only about 4,000 calories per ton, while American coal contains from 7000-8000.

About three hundred merchant vessels per month arrive at Constantinople. Of these 40 per cent come from the Black Sea and 60 per cent from the west.

The approximate daily consumption of coal in Turkey is given as: Gas companies, railroads, electric light companies, water companies and arsenals, 600 tons; coal bunkering, 800 tons; factories and shops, 120 tons; mills, 100 tons; Imperial palace, schools, ministries, municipalities and institutions, 90 tons; military shops, 190 tons; Imperial navy, 110 tons; total, 2,010 tons per day.

In the majority of cases credits are established in New York. In some instances local importers have obtained through London five to six months' credit to finance their coal purchases in the United States. An American bank was recently established in Constantinople which is of great service in clarifying the exchange situation.

About 15 per cent of the total coal imported is gas coal. The only storage facilities are five coal depots on the quays of 10,000 tons maximum capacity. The port is always crowded and shipping is congested. Demurrage rates are very high. Passenger vessels may unload along the quay, but cargo vessels must lighter. The cost of lighterage, labor and loss from spillage greatly increase the price of coal on the dock.

A return cargo always is available both at Constantinople and at Black Sea ports, consisting of wool, hides, gum, opium, poppy seed and tobacco.

Lighterage facilities are controlled by the Levant Stevedoring Co., which is a combination of six shipping agents representing the principal British lines. Prices for lighterage range 10 ltq. to 15 ltq. per lighter per day.

High-grade American coal, however, is so satisfactory, and the coal business so new in Turkey, that even with no embargo on coal in England, there is opportunity for the development of big business by reputable firms in America.

Peru a Promising Market for American Coal

The use of gas and steam coal in Peru is about equally divided, screened coal being used exclusively by the gas plants, and run of mine for steam purposes. Briquets also are in favor, and are reported as giving 14,500 B.t.u.

The city of Lima uses 80 per cent gas coal, but has no smoke ordinance. All the gas coal now in use comes from Australia. It is said to be exceedingly hard and blocky, standing handling well. Its cost is about $6 per ton more than American coal, and there seems no reason why American coal of similar grade should not be introduced without difficulty, as steam coal from the United States already meets with favor.

The usual west coast demurrage charges obtain. The port of Callao is a good safe harbor. Paita also is fairly good. Chimbote is land locked. All other ports are open roadsteads.

Until 1914 all Peruvian coal came from Great Britain. The trade being now divided between Australia and the United States indicates another opportunity for the introduction of high-grade product.

There are considerable quantities of sugar, cotton, and ores exported, and no difficulty will be experienced in procuring return cargoes if sailing dates are advertised in advance.

Poland's Coal Needs Purchased by State Coal Offices

The situation in Poland is somewhat anomalous. The gas-coal requirements are 57,000 tons per month. The railroads use screened lump and the industrial plants use slack. More than 75 per cent of these industries are equipped with automatic stokers, to whom slack screenings are allotted by the government.

There are no storage facilities, no smoke ordinances, no limits on sulphur in gas, and the development of byproducts is given great attention.

The principal source of supply is from Germany and Czecho-Slovakia. All coal is bought through the State Coal Offices, paid for by the government, distributed to consumers and collected for at arbitrary rates.

The principal port is Danzig, where only fair unloading facilities exist. In view of the very low grade of coal which Poland has had for some years past, an excellent opportunity is presented for the introduction of American coal.

Spain in Receptive Mood Toward Pocahontas Coal

The Spanish railroads, like the Italian, use low-volatile coal. The specifications are 12-20 per cent volatile, not less than 14,400 B.t.u., and ash not exceeding 8 per cent. Shipments are taken at regular intervals throughout the year. About twice as much steam coal is used as gas coal. There are no smoke ordinances.

The Madrid gas plant specifies coal running from 30 per cent-32 per cent volatile and not exceeding 18 per cent ash. The older portion of the plant has hand-charged inclined retorts. Within the past three years two new series of 27 Hovine retorts each, 6 meters long, with a 24-hour capacity of 11,000 cu. meters (388,454 cu.ft.) have been installed. The average yield is 300 cu.meters (10,594 cu.ft.) per ton. No attempts at making water gas have been made. Pitch, tar, ammonia and tar byproducts are efficiently produced and marketed.

The railroads and larger gas and steel plants import their coal direct. The smaller consumers, such as glass works, etc., buy through local importers.

The usual rate of discharge at Spanish ports is 400 tons per day. Steamers discharge into lighters which are towed alongside loading wharves and discharged by small cranes.

British coal at one time dominated the Spanish market. American coal, especially Pocahontas, met a ready reception, and, if c.i.f. prices could be quoted (August, 1920) under 185 pesetas, would still find strong demand.

Return cargoes are not frequent. Pyrites from Huelva are transported to Baltimore at about one-half the rate to Great Britain.

United States Supplies Half Swiss Needs

The railroads and principal industries of Switzerland prefer gas coal. Deliveries are about equally divided throughout the year. The heavy consumption in winter is offset by the use of smaller amounts from spring to fall, so that a reserve stock of two to six months is usually available.

Switzerland will for many years require the importation of American coal, the quantity, however, depending on conditions in the European coal fields. With this in mind, the Swiss Coal Association in Basle has an office known as the Official Purchasing Office of the Legation of Switzerland in New York.

Transportation also is taken care of by this association and deliveries are made to Swiss consumers f.o.b. the Swiss frontier, price quoted in Swiss currency.

All types of gas retorts are in use and coal containing up to 2½ per cent sulphur can be used, although usually mixed with lower sulphur coal when possible. The average yield is 360 cu. meters (12,713 cu.ft.) of gas per ton. The sale of gashouse coke furnishes a material income, so that a good gas coking coal is especially desired.

Most of the coal is shipped via Antwerp, Rotterdam or Genoa, with occasional cargoes to Cette or Dunkirk. At present England is supplying 25 per cent and the United States 50 per cent of the total Swiss requirements.

In conclusion the writer cannot refrain from voicing deep regret at the many instances in which good permanent markets for American coal have been jeopardized by the greed and dishonesty of human vultures masquerading as American coal exporters. To establish a high standard both for quality of coal and for business dealing which shall not only assist in building up a merchant marine but shall also place America in an important position as a coal exporting nation is the duty of every operator, transshipper and exporter who would claim America as his country.

The writer is indebted to the Bureau of Foreign and Domestic Commerce at Washington, D. C.; Hugh D. Butler, now Trade Commissioner at the Embassy at London; Captain A. J. Fisk, coal expert to the American technical adviser to the Polish government; the reports of Trade Commissioner Whitham, and various commercial attachés for corroboration of much data contained in this article.

The Weather Vane of Industry

News Notes Chronicling the Trend of Industrial Activities on Which Depends the Immediate and Future Market for Coal

BUSINESS is on the up-grade but not yet "running on high," declares Archer Wall Douglas in his monthly review of business conditions in the current number of *The Nation's Business*. "The great mass of the people are looking the facts squarely in the face," the review continues. "There are no delusions as to any sudden return to prosperity, nor of advancing prices, nor of scarcity in any lines. There is the realization that both time and patience are required to work out the problems which confront us. The many have accepted the situation, and are adapting themselves to the inevitable, which is that much progress made in the way of readjustment.

"In many of the large centers there is the curious paradox of much unemployment accompanied by growing savings accounts. The explanation seems to be that those who have jobs are none too certain of them, and are casting consequent anchors to windward in the shape of less spending.

"The financial position of the farmer grows stronger as he is gradually liquidating his obligations, decreasing his cost of production, and finding more economical methods of distribution, largely through his co-operative associations.

"Conditions are much spotted, both as to localities and lines of trade. In the retail trade, buying is better in the large cities than in the country towns. As is usually the case, surface indications in the great centers, such as crowded stores and places of amusement, with the vast number of automobiles on the streets, give scant indication of real underlying economic conditions.

"There is much construction of hard surface roads under way as most communities seem perfectly willing to tax themselves for this purpose. These permanent highways open up far reaching future possibilities of cheap and efficient transportation to the motor truck, but which for the nonce is content to bide its time.

"The automobile and rubber industries have come back in a very definite fashion when some false proprets thought they had taken the full count for the time being. So far they have disappointed those who forecast a mere spurt instead of a continuous performance. There are still few belated thinkers who have overstayed their time and who fail to realize that automobiles are neither a fad nor a mere luxury but an essential and inherent phase of modern life."

Loading of Freight Is Gaining

An increase of 32,133 in the number of cars loaded with revenue freight during the week which ended on May 14, compared with the previous week, was shown by reports just received by the Car Service Division of the American Railway Association from the railroads of the country. The increase was largely due to increased loading of coal and ore principally for Lake movement. The total for the week was 750,158 cars, which was however 92,987 below that for the corresponding week in 1920 but 10,213 more than that for the corresponding week in 1919. Increases during the week were reported in the loading of all commodities except grain and grain products and livestock, compared with the previous week. Merchandise and miscellaneous freight, which includes manufactured products, totaled 451,062 cars, or an increase of 4,000 over the week of May 7.

Cotton Mill Idle 5 Months Reopens

The Greylock Cotton Mill, at Williamstown, Mass., which had been closed since December, reopened Monday, May 23, on a forty-eight-hour-a-week schedule, it has been announced. The mill normally employs 250 persons

Reading Ry. Re-employs 700 Men

The Philadelphia & Reading Railroad Co. on May 19 authorized the re-employment of about 700 men on its track and work train forces. This has been done, it is understood, to place the roadway in the best condition for an expected early increase in business.

Pearl Button Factory Runs Steadily

A leading pearl button manufacturer announced last week that his factory at Grayville, Ill., which had been closed down last fall when the depression first made itself felt, is now being operated steadily. At present thirty cutters are employed. The manufacturer believes that the factory will be running at full capacity in the near future if the steadily increasing demand continues.

Re-employment Halts in Detroit

A net decrease of 1,776 men employed was shown by the labor report of the employers' association of Detroit May 20. It was the first week the employment situation had not improved by several thousand since the industrial revival began.

Rubber Goods Trade Improves

Although still below normal the gradual improvement shown in the condition of the mechanical rubber goods trade has led manufacturers to believe that the determined upward trend will continue. Trading is in small volume, with the railroads and mines buying only in piecemeal quantities. Further price cuts have been made, although the percentages could not be determined.

Textile Industry Is Improving

The State Department of Labor and Industries of Massachusetts announced May 25 that its reports indicated improved conditions in the textile industry, that the demand for boots and shoes persisted, although the majority of plants were still on reduced schedules, and that the metal and machinery trades were dull without signs of immediate improvement.

Watch Factories Running Again

The Robert H. Ingersoll & Bro. watch factories at Waterbury, Conn., and Trenton, N. J., which had been closed for two months on account of poor business conditions, have been reopened and 2,500 workers are put back on an earning basis, according to an announcement by Robert H. Ingersoll, president of the company, last week. Mr. Ingersoll also announced a reduction in prices, showing that the old dollar watch is getting back toward its pre-war price when a dollar was a dollar. The reduction is from $2.50 to $1.75.

Stocks of Coal Held by Public Utilities On April 1, 1921

OF ALL types of consumers the public utilities appear to have held the largest reserves on April 1, 1921, as indicated by the Geological Surveys' canvass of consumers' stocks. The supplies on hand at electric utilities and coal-gas plants, expressed in terms of weeks and days' consumption, are shown in the following table:

WEEKS' SUPPLY OF BITUMINOUS COAL IN HANDS OF PUBLIC UTILITY PLANTS IN THE UNITED STATES

Figures expressed in weeks and days at current rate of consumption at time of stock taking*

	July 15, 1918	Oct. 1, 1918	Nov. 11, 1918	Jan. 1, 1919	Apr. 1, 1919	Mch. 1, 1920	June 1, 1920	Jan. 1, 1921	Apr. 1, 1921
lectric utilities	5–4	6–5	7–0	7–0	6–6	3–0	3–1	6–2	6–6
oal-gas plants	10–2	12–0	12–1	11–4	8–2	4–3	3–1	7–6	9–3

*The weekly rates of consumption used in calculating the weeks' supply are as follows: For the four dates, July 15, 1918, to Jan. 1, 1919, the average for the month following date of stock taking; for April 1, 1919, average for January, February and March, 1919; for March 1 and June 1, 1920, average for March, April, and May, 1920; for Jan. 1 and April 1, 1921, average for January, February, and March, 1921.

Both the electric utilities and the coal-gas plants took advantage of the depressed condition of the coal market to increase their reserves during the first quarter of the year. A group of representative gas plants had on hand 19 per cent more coal on April 1 than on Jan. 1, and 331 electric utility plants increased their stocks during the same period about 8 per cent.

On April 1 these 331 plants carried an average of 6 weeks' and 6 day's supply at the rate of consumption during the first quarter of 1921. New England utilities were heavily stocked with coal, the average ranging from 10 weeks in Connecticut to 15 weeks in Massachusetts. The Middle Atlantic States and the South Atlantic coastal plain were well stocked, as was the Lake dock territory, except Wisconsin. The States of the Central Mississippi Valley were less well supplied.

Records of stocks in terms of weeks' supply may be misleading when the rate of consumption is low, as at present. The varying rate of consumption, however, does not affect comparisons of the actual tonnage on hand. In comparison with Jan. 1, 1921, stocks held by a group of 268 plants on April 1 had increased in the Middle Atlantic States, in Virginia, the Carolinas, Alabama, Kentucky and Michigan. They had decreased in New England, the Lake dock territory, and practically everywhere west of the Mississippi. The increases, however, were more than sufficient to offset the decreases. In comparison with June 1, 1920, the condition on April 1 of the present year showed an almost universal improvement, the only important exceptions being Wisconsin, Kansas, Missouri, Oklahoma and North Dakota.

Perhaps the most significant comparison that can be made is between the present condition and that on April 1, 1919. The average stock for all plants was about 5 per cent greater on April 1, 1921, than it was two years before. The increase was general over the Middle Atlantic States, the Southeast and the Lake dock territory, again excepting Wisconsin. New England as a whole was slightly better stocked than in 1919. The Southwest and the Central Mississippi Valley were, however, less well supplied.

Retailers Oppose Elimination of Pea Size

THE committee of retailers on resizing of anthracite has submitted a report covering the results of a referendum on the subject.

One hundred and nineteen companies throughout the country say that they can successfully care for present pea-coal users if pea coal be eliminated, one-half of it going into range, the other half into buckwheat; seventy-three companies answer "No." These seventy-three companies represent more than 200,000 tons of pea-coal business as against 128,000 tons who believe the new sizing would be acceptable to present pea-coal users.

One hundred and eleven companies with 193,000 tons of pea-coal business say that they could not sell the new buckwheat to present pea-coal consumers. Only seventy-eight companies with 73,000 tons of pea-coal business believe they could sell the new buckwheat to pea-coal users.

Question No. 4, which asks point blank for approval or disapproval of this plan, resulted in a vote representing 186,700 tons of pea coal in disapproval as against 131,200 tons who approve. The net result of the referendum, therefore, is to disapprove of the plan to eliminate pea coal in this manner.

Many questionnaires were returned with notations to the effect that the original proposition of but two domestic sizes should be insisted upon. Others frankly stated that they preferred the Lansford sizing which the Executive Committee of the National Retail Coal Merchants Association inspected in the spring of 1920, but did not approve.

The committee recommends reiteratation of the original proposition in favor of but two domestic sizes of coal, and requests the operators to continue their experiments along this line.

REFERENDUM ON RESIZING OF ANTHRACITE CONDUCTED BY THE NATIONAL RETAIL COAL MERCHANTS' ASSOCIATION

(All tonnages are for pea coal only)

						Question No. 2 (a)					Question No. 3 (b)					Question No. 4 (c)				
						Yes		No			Yes		No			Yes		No		
	Companies Reporting	Total Tonnage of Pea	Domestic	Apartment House	Steam	Companies	Tons	Companies	Tons	No Expression	Companies	Tons	Companies	Tons	No Expression	Companies	Tons	Companies	Tons	No Expression
New England	37	36,800	29,790	5,340	1,670	14	8,750	21	28,050	2[d]	7	6,060	27	23,730	3[i]	13	9,100	24	27,700	[d]
New York State, abt., (Unit report)	(1,200)	?	?	?	?	....	Yes	....	.....	...	Yes	.....	....	.....	...	.....	.....		No	[e]
Brooklyn, N. Y.	5	14,500	9,500	4,250	750	1	4,000	4	10,500	...	1	4,000	3	8,000	1	2	4,000	1	3,000	2
New Jersey	34	60,070	44,990	9,280	5,800	15	26,800	19	33,270	...	6	9,440	27	35,150	1	18	38,305	13	19,865	3
Pennsylvania	26	174,254	142,919	17,361	13,974	17	51,100	9	123,154	...	8	27,275	17	115,644	1	17	45,600	9	128,654	..
Philadelphia	(25)	(172,754)	(141,419)	(17,361)	(13,974)	(16)	(49,600)	(9)	(123,154)	...	(7[f])	(25,775)	(17)	(115,644)	(1)	(16[f])	(44,100)	(9[g])	(128,654)	..
Maryland, Dist. of Columbia and Virginia	13	6,030	4,765	425	840	9	4,900	2	780	2	6	2,735	6	2,030	1	8[h]	3,200	5	2,830	..
Michigan (excl. Detroit)	33	8,575	6,830	1,365	380	26	8,125	3	250	4	22	4,280	7	2,150	4	27	7,175	5	1,200	1
Detroit	1	2,000	200	1,800	.....	1	2,000	....	.....	...	1	200	....	.....	...	.....	2,000	....	.....	..
Illinois and Wisconsin (excl. Chicago)	50	12,055	9,943	2,050	62	28	8,055	12	2,550	10	19	4,955	21	4,988	10	31[j]	7,405	15	2,200	4
Minneapolis—St. Paul	7	14,620	14,620	.....	.....	6	13,320	1	1,300	...	6	13,320	1	1,300	...	6[k]	13,320	1	1,300	..
Miscellaneous (address not shown)	4	1,500	1,500	.....	.....	2	1,000	2	500	...	2	1,000	2	500	...	3	1,100	....	.....	1
	210	330,404	265,057	41,871	23,476	119	128,050	73	200,354	18	78	73,265	111	193,492	21	126	131,205	73	186,749	11

(a) Question 2 was: "Could you successfully take care of your present pea coal-users, if pea coal were to be eliminated: one-half going to range and one-half into buckwheat?"
(b) Question 3 was: "Could new buckwheat be successfully sold to your present domestic pea-coal trade"
(c) Question 4 was: "Does the following resizing meet with your approval?" (Meaning the Proposition covered by Question 2).
(d) Three companies say Lansford sizing preferred.
(e) Two domestic sizes preferred, per formal resolution taken at annual meeting.
(f) Two say "if over ¾-inch mesh."
(g) Largest company says partially approve only.
(h) One company prefers Lansford sizing.
(i) Five companies prefer Lansford sizing.
(k) One company says "very much in favor."

Bids for New York City Department Coal Requirements, Opened May 10, Show Wide Variation

BIDS were opened by the Board of Purchase of New York City on May 10 for supplying several city departments with 16,946 tons of egg coal; 4,163 tons of stove, 1,116 tons of chestnut, 2,744 tons of pea; 7,212 tons of buckwheat No. 1; 23,433 tons of buckwheat No. 3; 8,323 tons of semi-bituminous mine-run; 157 tons of blacksmith coal and 536 tons of coke. Proposals were made on a basis of net tons and the specifications provided for a deduction in the event of any future cut in freight rates.

Bids received for furnishing the Department of Plant and Structures, Borough of Brooklyn, with 101 tons of stove, 64 tons of chestnut and 50 tons of blacksmith coal ranged from $13.23 to $13.75 for stove; $13.23 to $14 for chestnut and $9 to $9.95 per ton for blacksmith coal. The same prices were named for supplying stove and chestnut to the department's buildings in the Borough of Queens.

For supplying chestnut coal to the department's buildings in the Borough of Richmond bids ranged from $13.24 to $14.50 per ton.

Bid of $15.25 Received for Chestnut

For furnishing coal to the department buildings in the Harlem River Division, the bids ranged as follows: Stove, $12.07 to $13.85; chestnut, $12.07 to $15.25, according to place of delivery; egg, $13 to $13.40, and blacksmith, $7.75 to $11.50.

Other bids received for city departments included the following: Department of Correction—Blackwell's Island Penitentiary—3,440 net tons buckwheat No. 3, from $4.28 to $5.99; 101 Centre St., Manhattan, 1,360 tons buckwheat No. 1, $5.95 to $7; 318 tons semi-bituminous, $8.89 to $9.69; Jefferson Market Court, Manhattan, 224 tons pea, $10.75 to $11.40; 149 Raymond St., Brooklyn, 1,360 tons Buckwheat No. 1, $5.14 to $6.99; 318 tons semi-bituminous, $7.75 to $9.69; Blackwell's Island Penitentary; 2,156 tons semi-bituminous, $6.54 to $8.99; 536 tons coke, $10.30 to $12.47; Rikers Island Municipal Farm, 908 tons semi-bituminous, $6.62 to $9.25.

Blackwell's Island Workhouse bids were as follows:

	3,000 Tons Buckwheat No. 3	500 Tons Semi-Bituminous
Majestic Coal Co.	$4.28	$6.62
Penn Fuel Co.	5.44	8.70
Stephens Fuel Co.	4.77	6.89
V. H. Youngman & Co.	.....	6.98
Commonwealth Fuel Co.	5.23	8.56
Wyoming Valley Coal Co.	4.94	7.39
Farrell & Son.	5.99	8.99
G. D. Harris & Co.	.....	6.54
Inter City Fuel Co.	5.24	8.04
B. Nicoll & Co.	.....	7.04
Coney Island Coal Co.	5.20	.....

Street Cleaning Department—Manhattan, 1,235 tons stove, $13.33 to $13.60; 69 tons blacksmith, $9.69 to $11.80; Brooklyn, 352 tons egg, $11.86 to $13.25; 598 tons stove, $12.77 to $13.73.

Hart's Island Reformatory Prison bids ranged:

	6,173 Tons Buckwheat No. 3	168 Tons Stove	2,640 Tons Semi-Bituminous
Majestic Coal Co.	$4.50	.....	$6.62
Penn Fuel Co.	5.94	$13.00	9.25
V. H. Youngman & Co.	.....	.....	7.13
Stephens Fuel Co.	4.87	13.25	6.99
Commonwealth Fuel Co.	5.38	.....	8.65
Wyoming Valley Coal Co.	4.94	.....	7.49
Farrell & Son.	5.99	12.47	8.99
Inter-City Fuel Co.	5.34	11.86	8.14
B. Nicoll & Co.	.....	.....	7.18
G. D. Harris & Co.	.....	.....	6.65

N. Y. City Reformatory, New Hampton, Orange Co., N. Y., 1,620 tons, buckwheat No. 3, $5.29 to $5.90; 368 tons, semi-bituminous, $7.02 to $10; Department of Parks, Bronx, 1,232 tons pea, $10.75 to $12.12; 2,240 tons buckwheat No. 1, $7.74 to $8.48.

Police Department—Manhattan, 2,586 tons egg, $13.24 to $14; 770 tons pea, $10.75 to $11.40; Brooklyn; 2,109 tons egg, $11.86 to $13.23, 144 tons pea, $10.18 to $11.05; Queens, 487 tons egg, $12.60 to $14.16; 151 tons pea, $10.45 to $11.50; Richmond, 117 tons egg, $12.85 to $14.50.

Fire Department—Manhattan, 3,324 tons egg, $13.24 to $14; 404 tons chestnut, $13.24 to $14; Brooklyn, 3,104 tons egg, $11.86 to $13.25; 188 tons chestnut, $12.15 to $13.25; Queens, 1,265 tons egg and 134 tons chestnut, $14.16 each; The Bronx, 1,437 tons egg and 37 tons chestnut, $13.33 to $13.83.

Department of Health—Manhattan, 127 tons egg and 75 tons stove, $13.33 to $13.85 each. Brooklyn, 55 tons egg and 106 tons stove, $12.75 to $13.48.

Department of Water Supply, Gas and Electricity—Milburn Pumping Station, Baldwin, L. I.—302 tons semi-bituminous, $8.73 to $8.83. Massapequa, L. I., Pumping Station—187 tons semi-bituminous, $8.43 to $8.52. Pumping Station, 98th St. & Columbus Ave., Manhattan, 1,493 tons buckwheat No. 3, $5.89 to $6.99; 747 tons semi-bituminous, $8.49 to $9; 747 tons buckwheat No. 1, $7.87 to $8.23. Mt. Prospect Pumping Station, Brooklyn—168 tons buckwheat No. 1, $7.59 to $8.73. Jerome Park Pumping Station—635 tons buckwheat No. 3, $6.87 to $6.99; 635 tons semi-bituminous, $9 to $9.99. Flushing, L. I., Pumping Station—226 tons buckwheat No. 1, $8.78 to $8.88. Bayside, L. I., Pumping Station—122 tons buckwheat No. 1, $8.78 to $9.43. Clove Pumping Station, Richmond—1,325 tons buckwheat No. 1, $8.34 to $8.72. Grant City Pumping Station, Richmond—1,867 tons buckwheat No. 1, $8.38 to $8.52. Tottenville Pumping Station, Richmond—101 tons buckwheat No. 1, $8.34 to $9.43. 179th St., Manhattan, Pumping Station—Alongside, 1,512 tons buckwheat No. 3, $5.29 to $6.99; 1,512 tons semi-bituminous, $8.24 to $8.99.

Bituminous Coal Loaded Into Vessels at Lake Ports as Dumped by Docks for Season to End of April*

(In Net Tons)

Ports	Railroads	1921 Cargo	1921 Fuel	1921 Total	1920 Cargo	1920 Fuel	1920 Total	1919 Cargo	1919 Fuel	1919 Total
Toledo	Hocking Valley	253,024	6,610	259,634	0	0	0	273,310	8,250	281,560
	Toledo & Ohio Central	47,754	1,408	49,162	7,872	338	8,210	11,095	346	11,441
	Baltimore & Ohio	106,530	2,537	109,067	0	0	0	11,827	240	12,067
Sandusky	Pennsylvania	32,552	1,109	33,661	0	0	0	56,219	1,700	57,919
Huron	Wheeling & Lake Erie	133,374	3,634	137,008	87,860	6,054	93,914	104,511	3,428	107,939
Lorain	Baltimore & Ohio	175,517	9,242	184,759	93,138	12,524	105,662	127,795	5,125	132,920
Cleveland	Pennsylvania	159,472	8,040	167,512	6,196	2,514	8,710	95,494	15,531	111,025
	Erie	24,983	1,564	26,547	0	0	0	0	0	0
Fairport	Baltimore & Ohio	0	0	0	0	0	0	0	914	914
Ashtabula	New York Central	108,633	4,755	113,388	8,113	803	8,916	116,785	7,672	124,457
	Pennsylvania	97,831	4,017	101,848	766	1,566	2,332	180,618	5,637	186,255
Conneaut	Bessemer & Lake Erie	40,393	292	40,685	95,055	2,883	97,938	77,955	237	78,192
Erie	Pennsylvania—West	60,403	2,383	62,786	0	0	0	22,040	1,821	23,861
	Pennsylvania—East	2,306	797	3,103	2,572	948	3,520	4,534	119	4,653
Totals		1,242,772	46,388	1,289,160	301,572	27,630	329,202	1,082,183	51,020	1,133,203

* Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, Manager.

Coal Production Costs and Profits in Great Britain

Costs of production, profits and other statistics of the British coal industry for March, 1921, compared with the two preceding months and the year 1920, are given in the following table, published by the *Colliery Guardian:*

	Month Ended March 31, 1921		Month Ended Feb. 28, 1921		Month Ended Jan. 31, 1921		Year 1920	
Output:	Gross Tons		Gross Tons		Gross Tons		Gross Tons	
1. Tonnage raised	17,408,000		17,126,000		19,249,000		229,063,000	
2. Mine consumption and miners' coal	2,115,694		1,957,580		2,122,463		23,792,598	
3. Tonnage disposable commercially*	15,292,306*		15,168,420§		17,126,537 ‖		205,270,402 ¶	
	Amount	Per Ton Disposable Commercially	Amount	Per Ton Disposable Commercially	Amount	Per Ton Disposable Com'ercially	Amount	Per Ton Disposable Com'ercially
Costs of Production:								
4. Wages	£21,256,923	27s. 9.61d.	£22.223.764	29s. 3.63d.	£27,046,305	31s. 7.01d.	£264,721,632	25s. 9.50d.
5. Stores and timber	5,619,784	7s. 4.20d.	4,611,271	6s. 0.96d.	4,738,748	5s. 6.41d.	55,162,608	5s. 4.49d.
6. Other costs**	2,544,033	3s. 3.93d.	2,202,601	2s. 10.85d.	2,298,832	2s. 8.21d.	24,906,628	2s. 5.12d.
7. Royalties	523,381	0s. 8.21d.	504,093	0s. 7.98d.	556,425	0s. 7.80d.	6,605,083	0s. 7.72d.
8. Total costs	£29,944,121	39s. 1.95d.	£29,541,729	38s. 11.42d.	£34,640,310	40s. 5.43d.	£351,395,951	34s. 2.83d.
9. Deduct proceeds of miners' coal †	146,239	0s. 2.29d.†	142,565	0s. 2.26d.†	171,577	0s. 2.41d.†	1,540,777	0s. 1.80d.†
10. Net costs	£29,797,882	38s. 11.66d.	£29,399,164	38s. 9.16d.	£34,468,733	40s. 3.02d.	£349,855,174	34s. 1.03d.‡
Proceeds:								
11. Commercial disposals	24,538,673	32s. 1.11d.	24,862,768	32s. 9.39d.	29,579,402	34s. 6.51d.	383,947,511	37s. 4.90d.
12. Balance:‡								
Debits	£5,259,209	6s. 10.55d.‡	£4,536,396	5s. 11.77d.‡	£4,889,331	5s. 8.51d.‡		
Credits							£34,092,337	3s. 3.87d.‡
13. Number of work people employed	1,197,765		1,218,798		1,224,486		1,185,108.5	
14. Tonnage raised per person employed	14.53		14.05		15.72		193.28	
15. Earnings per person employed	£17 15s. 0d.		£18 4s. 8d.		£22 1s. 9d.		£223 7s. 5d.	

* Of the 15,292,306 tons disposed of commercially, 3,024,083 tons were shipped for export and foreign bunkers, mainly from South Wales and Monmouthshire, Northumberland and Durham.

† The proceeds of miners' coal, so far as it is supplied at special prices, are treated as a reduction of the cost of producing the coal disposed of commercially and the deductions in the "per ton" columns have been calculated by dividing the proceeds of miners' coal by the tonnage disposable commercially.

‡ In addition to the deficit shown in Item 12, provision has to be made for:— depreciation; interest on debentures and other loans; capital adjustments under the Finance Acts; and the profit to which the owners are entitled under the Coal Mines (Emergency) Act, 1920-21.

§ Including 2,767,880 tons shipped for exports and foreign bunkers.

‖ Including 2,741,714 tons shipped for exports and foreign bunkers.

¶ Including 38,772,213 tons shipped for exports and foreign bunkers.

** Management, salaries, insurances, repairs, office, selling and general expenses, etc.

A Few English Miners Return to Work

SIX hundred Shropshire mine workers returned to the mines on May 25 under a temporary wage agreement with the colliery owners. The Government on May 24 was of opinion, however, that it was useless to try to bring the parties together as long as their propositions were so grievously variant. When Parliament met on that date Austen Chamberlain, Government leader in the House of Commons, being asked if Lloyd George could make a statement, requested that the question be put again on May 26. Rumors were circulating that by May 27 a renewal of the conferences might be expected, and on May 25 Mr. Chamberlain announced that the Government had actually summoned the conference.

Among the strikers the desire for pooling of costs and earnings still persists in some quarters, and the men are still in hope of being successful in obtaining a national pool, but in other sections, according to labor leaders, their desire is simply to obtain a wage scale better than that now offered. Safety gangs in some sections are doing work preparatory to a resumption.

Many London street-car men were talking of a sympathetic strike, but when the question was put to a vote it was so discouraging that the leaders have refused to announce the outcome, so clearly did it evince a lack of interest in the mine workers' cause among the employees of the London street railways. The lack of coal has made further cuts in train service and the London subways are now closed down after 11.45 p.m. For a while the volunteers who were unloading foreign coal and the dockworkers in Glasgow refused to go to work, but now, having been assured that they will not be victimized by the strikers, they have decided to return.

Canada Reduces Coal Freight Rate 10 Per Cent for Summer

CANADA'S Board of Railway Commissioners, in session at Ottawa, May 23, ordered a 10-per cent summer reduction in freight rates on coal moved in the prairie provinces. The lower rate is effective from June 1 to Aug. 21.

Alabama and Mingo County Men Look to Washington for Assistance

CERTAIN influences are being used in an attempt to transfer the Alabama wage dispute to Washington. A body, taking the attractive name of the American Civil Liberties Union, has appealed to Secretary of Labor Davis for an investigation of the labor troubles in the coal fields of Alabama, declaring the Governor's recent award "a gross injustice to miners" and alleging that it "perpetuates conditions that may break out at any time into open industrial conflict."

The appeal declares that the Governor's orders were in open violation of the civil rights of the mine workers and that the whole power of the state was thrown against the workers from September, 1920, to February of this year, the purpose being "to crush the effort of the workers to obtain decent conditions and the right of organization."

Fred Mooney, the district president of the United Mine Workers of America in that part of West Virginia to which Mingo County is assigned by the organization, has been in Washington seeking to obtain a Congressional investigation of the mine troubles of Mingo County. Last session Senator Johnson, of California, introduced a resolution for an investigation into the strike, but no action was taken, as Chairman Kenyon, of the Education and Labor Committee, frankly stated that no time remained for disposal during that session. President John Lewis of the United Mine Workers is conferring with Secretary of Labor Davis in the hope that he will assist in a settlement agreeable to the wishes of the mine workers' organization. A Senatorial investigation was ordered May 26. Both operators and mine workers are anxious for it, and Senators Sutherland and Elkins are outspoken in its favor.

Operators, Wholesalers and Retailers to Be Represented at Conference on Coal Bill

THE CONFERENCE which is to consider the scope of fact-finding which is to be included in the Frelinghuysen bill is to be held at the Department of the Interior in Washington, June 7. Senator Frelinghuysen will preside. Secretaries Hoover and Fall will be in attendance. In addition there will be three representatives of each of the following organizations: National Coal Association, American Wholesale Coal Association, National Retail Coal Merchants Association. The anthracite industry also will have three representatives in attendance. The National Coal Association will be represented by W. K. Field, E. E. White, and Ralph Crews. The American Wholesale Coal Association will be represented by W. R. Coyle, Noah H. Swayne and George H. Cushing. The retailers will be represented by Roger Stevens, John Lloyd and Homer D. Jones. The anthracite industry will be represented by S. B. Warriner, William L. Connell and W. H. Williams.

No formal plans are to be made for the conduct of the meeting. Senator Frelinghuysen has expressed the desire that it be a round-table discussion. He has expressed a willingness to alter his bill if it can be shown that the bill in its present form works a hardship out of proportion to the value to be derived. He is anxious to have it in just as simple form as will accomplish its purposes and protect the interests of the public.

A preliminary conference will be held June 6 at the Washington Hotel by the representatives of the coal organizations.

Manufacturers' Counsel Says Compulsory Fact Finding Is Unconstitutional

ANY law providing for compulsory collection of production statistics is distinctly beyond the power of Congress and clearly unconstitutional, according to an opinion rendered by Nathan B. Williams, counsel for the National Manufacturers Association, in connection with the Frelinghuysen bill providing for compulsory fact-finding as to coal production. Mr. Williams states that it has been held repeatedly by the Supreme Court of the United States that, under the commerce clause of the constitution, Congress has no control whatever over production, as "production" is not "commerce." He cites various opinions to sustain his contention.

The Calder Committee on Reconstruction and Production, in its final report states that it abandons the idea of government control of coal and recommends in its stead legislation providing for the securing, collecting and publishing of information with respect to the coal business.

Government Files Brief in National Coal Association Injunction Case

LERT SLACK, special assistant to the Attorney General, has filed his brief with the Supreme Court of the District of Columbia in the injunction proceedings brought by the National Coal Association. Mr. Slack develops in detail the arguments which he made orally at the time the case was heard. Counsel for the National Coal Association is completing the brief which will be presented in behalf of the National Coal Association's contention.

Creditors of Old Tidewater Exchange Fail To Devise Means to Collect Charges

CREDITORS of the old Tidewater Coal Exchange held a meeting at the Whitehall Club, New York City, on May 24 to formulate a course of action regarding the proper method of assessing demurrage charges. There were about twenty in attendance. No definite action was taken and no date was fixed for holding another meeting. After the meeting Charles S. Allen, secretary of the Wholesale Coal Trade Association of New York, Inc., who had issued the call for the meeting, said it had been suggested to him that a committee to represent the debtors of the old Exchange, against which a petition in bankruptcy has been filed, be appointed.

Charles A. Owen, of the Imperial Coal Corporation, who was the chairman of the meeting, in stating the objects of the gathering said he believed it would be unwise to appoint a trustee who would bring suits against debtor members of the Exchange as lawyers' and other fees would eat up all moneys which might be coming to them. On the other hand if the matters in litigation were given to juries to decide, the Exchange would lose out in many instances. He favored compromising the claims. Others spoke in the same strain, favoring the appointment of a trustee who would endeavor to bring about an amiable settlement without taking the matter into court.

Convention of Coal Wholesalers to Consider Establishment of Traffic Division

THE program of the convention of the American Wholesale Coal Association is practically in its final form. The opening session, June 7, will be devoted largely to the discussion of the market situation. D. B. Wentz is scheduled to discuss the Eastern situation; C. M. Modderwell, the Western situation, and H. Y. Saint, the export situation. George H. Cushing, the managing director, will present at that session a printed statistical report dealing with the subject of the discussion. C. L. Couch, president of the organization, will deliver his annual address. The reports of the managing director and of the treasurer will be distributed in printed form. The report of the managing director will show that the membership of the association is now well above the six hundred mark.

The subject of the afternoon session will be traffic. At that session it will be decided whether or not the association will establish a traffic division, which will involve the employment of an expert traffic man to be stationed in the Washington office of the association. The discussion will revolve around talks by Wm. A. Wimbish, G. N. Snider and Judge Arthur B. Hayes. The report of the traffic committee will be presented.

The event in the evening will be the banquet, which is to be held at the Washington Hotel. Noah H. Swayne will be toastmaster. Speakers will be C. L. Couch, J. G. Bradley, Ty Cobb and Irwin S. Cobb.

Officers of the association for the ensuing year will be elected on Wednesday morning. The morning discussion will be on "The Future of Associations." J. D. A. Morrow and Ellery B. Gordon will furnish some of the material to be taken up for general discussion. C. C. Carlin will discuss legislation, after which the representatives of the association who will have attended the Frelinghuysen conference will report. The convention then will be called upon to vote on resolutions.

Governor Sproul Signs Mine-Cave Bills; Will Operators Absorb Coal Tax?

GOVERNOR SPROUL of Pennsylvania signed the Kohler and Fowler mine-cave bills on Friday, May 27. Apparently the Governor was considerably in doubt as to the right course and possibly was governed more by his early promise to sign the bills than by his judgment as to their value. S. J. McDonald, president of the Scranton Central Labor Union, says they will be of as much benefit to the community as an epidemic of smallpox.

Unconfirmed rumors that are circulating declare that it is the intention of the anthracite companies to absorb without increase in price the anthracite coal tax until the constitutionality of the act has been finally determined by the courts. They intend to fight it, believing it unfair to the consumer.

F. H. Alfred Urges Summer Delivery of Next Winter's Coal

"THE Pere Marquette Ry. has just completed contracts for company coal for the ensuing 12-month period, and we are already storing fuel for next winter's operation. This prompts me to appeal to manufacturers and coal dealers to begin now to buy and store coal in adequate volume, rather than wait until later in the year." Frank H. Alfred, president of the Pere Marquette, thus urges manufacturers and coal dealers in the territory served by the company's lines to push "summer delivery" of next winter's supplies.

"There are economic advantages," continued Mr. Alfred, "in purchasing coal for winter use during the summer months, and two of these are of the greatest importance: The usual lower prices that prevail during the summer months and the certainty of timely delivery.

"We are all hopeful of better business conditions returning shortly and so in moving every ton of freight possible during the summer months, when the transportation machine is at its maximum of efficiency, we can then dispose of the worries about its adequacy to meet the demands of a returned prosperity."

Representative Linthicum Asks Inquiry Into Baltimore Coal Prices

REPRESENTATIVE J. CHARLES LINTHICUM of Maryland in a letter to States Attorney Robert F. Leach, dated May 25, asked an investigation by the Grand Jury to determine whether illegal or unjust methods are pursued by Baltimore retail coal dealers to maintain the present prices of anthracite coal.

The request was made, Mr. Linthicum said, on the ground that prices should be and could be decreased somewhat if the dealers wanted a decrease.

Mr. Linthicum points out that there is a uniform price for anthracite coal offered by the Baltimore dealers and an absence of competition on a price and value basis. He says it "has been asserted and it would appear that there is a centralized body which not only fixes the price of coal for each month but also in some manner prevents competition by independent dealers through an understanding with coal operators from whom the dealer obtains his supply."

Retail coal dealers in Baltimore have insisted that the margin between the final sale price of anthracite coal and the purchase price paid by them was about $2.83 a ton.

Details of Reading Dissolution Settled

TWO important points decided by the Federal District Court in Philadelphia on May 21 in the Reading dissolution case were that equal rights be given to common and preferred stockholders in receiving the stock of the new coal corporation taking over the Reading's (a holding company) equity in the P. & R. Coal & Iron Co., and that the majority of the stock of the Central Railroad of New Jersey be put into the hands of a trustee to await a favorable time for its disposal.

The Reading Company after its holdings in the coal company and the Central Railroad of New Jersey are disposed of, is to be merged with the P. & R. Railroad Co., which will subject it to regulation as a common carrier.

The common stockholders, however, contend that they are entitled to more than the preferred stockholders, and have appointed a committee to carry the plan before the U. S. Supreme Court.

Ohio Men Ask Flexible Differential in Rates From Pennsylvania and West Virginia

COAL rates from Pennsylvania and West Virginia points will be considered at a hearing to be held in Columbus, Ohio, June 11 by an examiner of the Interstate Commerce Commission. The Southern Ohio Coal Exchange has attacked all these rates, which has precipitated a proceeding which may have a far-reaching effect. The petition filed with the Interstate Commerce Commission presents a novel theory, in that it proposes to substitute a flexible differential for the fixed differential. It is generally conceded that the 40c. differential fixed in 1917 on the basis of the rates in effect at that time should be wider, so as to maintain a corresponding relationship, now that higher rates are in effect.

J. D. A. Morrow to Represent Coal in International Chamber of Commerce

IT IS understood that J. D. A. Morrow, vice-president of the National Coal Association, will leave for Europe early in June as representative of the coal association on the Raw Materials Division of the International Chamber of Commerce, which will hold its first meeting in London during the week of June 27.

"Restoration of the World's Commerce," the main theme of the conference, will be discussed by some two hundred delegates from all parts of the United States and representatives from eleven other countries. Some of the delegates from the United States have already sailed for Europe, but the majority will leave during the early part of June.

Walker D. Hines, Director General of the U. S. Railroad Administration, will be chairman of the conference on transportation and communication.

Mine Workers in Central Pennsylvania Refuse to Discuss Lower Wages

A REPLY has been made to coal operators around Du Bois, Pa., in answer to their request that the mine workers of District No. 2 meet their employers and discuss a readjustment. John Brophy, president of the district, which is otherwise known as that of Central Pennsylvania, sent the reply and said the request was somewhat vague, the questions to be discussed at the proposed conference not being specified. He added that the scale now in force had been endorsed by the national organization and could not be amended till March 31, 1922.

SECRETARY OF COMMERCE HOOVER in explaining before the House Appropriations Committee his plan to create divisions in the department to co-operate with industry in developing domestic and foreign trade, referred to the fact that in foreign countries there existed combinations for imports by which one group buys all articles of a certain kind, including coal, which groups dictate prices in the United States. He proposed the addition of specialists to the department to work out plans in co-operation with industries to meet these forces. Director Stratton, of the Standards Bureau, referring to fields for investigations looking to elimination of waste in industry, said that in ceramic work and other industrial processes not more than 25 per cent of the heat is utilized. He suggested investigations as to the utilization of low-grade fuels and the saving of the expensive fuels for more important uses. Secretary Hoover said that if the Government could turn the sulphur gases from furnaces into sulphur it would save the country $50,000,000 a year. Director Stratton referred to the fact that two or three firms had used waste heat to dry a product where before the product was dried by burning fuel.

AN INFORMAL DISCUSSION of the effect of Lake coal rates at Lake points not covered by the 28c. reduction took place in Washington May 26 between representatives of the various interests affected. There were separate conferences with Interstate Commerce Commission officials and with representatives of the railroads. Discrimination against Milwaukee, Detroit, and other points is created by the rate authorized on coal for the Northwest, it is alleged.

In *Coal Age*, May 19, page 916, the Georges Creek & Phoenix Mining Corporation, Philadelphia, was reported as bidding on 14,000 tons of Maryland coal for the Government Fuel Yard. The amount should have been 140,000 tons.

Industrial Buyers Are Incredulous at Coal Man's Urging to "Buy Now or All Is Lost"

Purchasing Agents Defer Purchase of Coal in Large Quantities Until Labor Costs Are Deflated—Altruistic Reasons for Buying Make Little Impression —Offer of Exceptional Value Would Make Consumer Anxious to Buy

By Elwood Sampson*
Written for *Coal Age*

WHY doesn't the industrial buyer buy coal NOW? Why does he not take advantage of the present low prices and thereby avoid the higher prices and all of the griefs of the winter season? These and many similar questions are undoubtedly being asked by almost everyone in the coal trade.

As it is an almost invariable rule for the industrial buyer either to remain silent or to give an offhand superficial reason for his action, the coal trade as a whole is kept in almost complete ignorance of the underlying reasons which govern the course that industrial buyers are pursuing. Because he has remained silent, most coal operators and dealers assume that he is short-sighted in his policy, and is "lying down on the job" in being indifferent to the gravity of the situation.

The industrial purchasing agent was never more alert than he is today. He has never more carefully watched each day's developments and weighed each and every factor which has any influence on the buying situation. He, therefore, has a certain definite understanding of the whole situation in general and in detail. As this is the result of a carefully worked-out analysis, and is constructive in principle, elucidation of the purchasing agents' viewpoint will help the present buyers' position in relation to the coal situation.

This can best be done by presenting the basic points brought out at our recent meetings, when only industrial purchasing agents were present, and we, therefore, were free to discuss openly our own problems and viewpoints.

Conclusions Based on Large Michigan Industries

Purchasing agents are not unanimous upon every point affecting them any more than any other class of business men. So I will pass by the various points on which we could not agree and present only those of far-reaching importance upon which there was an almost unanimous crystallization of opinion when the discussion was completed. As more than 90 per cent of Michigan's largest industrial concerns, which rank as "top notchers," were represented at at least one of these several state meetings held within the last three weeks, this presentation, while unofficial, is a true one.

The industrial purchasing agent's viewpoint is unavoidably radically different from that of the coal trade. There is the universal difference of viewpoint between buyer and seller. Also, there is the great difference in degree of importance to each side. To the coal trade the problems of coal production and sale cover the entire horizon. For us they form only a small portion, inasmuch as we have many other problems of equally great importance. For this reason the coal man gives his entire time and energy to solving his particular industrial problems. The difficulties are therefore magnified till they seem all-embracing.

When we consider them, we do so in relation to our many other equally important problems. In so doing we naturally reduce the size of these coal problems to a small percentage of what they mean to the coal industry. We, therefore, cannot begin to be so greatly excited over them as you are; or else we would lose the proper perspective, which it is necessary for us to keep in order to meet all of our various problems.

Because of the all-importance of the coal industry to the coal trade, you try out new methods for promoting sales and for protecting your industry. These often strike you as the inspiration of the moment, and should be wonderfully effective. However, in our buying positions we have long ago learned that human nature is basically the same. Every industry goes through the same course of events, whether coal, copper or steel, etc. The things you are doing have already been done or are still to be done by all of the other industries. This regular order of events tells the professional buyer what is the coal situation, both present and future.

Coal Industry Is in Propaganda Stage

You have just been going through the stage which buyers call the "propaganda stage." This propaganda stage always expresses itself in two dominating lines of thought. One is an aggressive defense of the position of that particular industry. The other is telling the professional buyer why and how he should handle his work of purchasing. Long ago we learned that any industry carrying on an aggressive defense has some improper conditions which the industry itself knows about but which it hopes to keep concealed by directing attention in some other direction. For this reason, even if his own judgment told the professional buyer that prices had reached bottom, for instance, he would know that his judgment was mistaken so long as that aggressively defensive propaganda was being carried on.

The other parallel line of action of telling the buyer how he should handle his professional work is the expression of a certain panicky state of thought. This occurs when an industry has gone through prosperous times which have produced a general letting down of ability. The man, or the firm, or the industry that has become soft through a long period of prosperity is panic-stricken when the bottom starts to slip out from under. This causes the party so stricken to place the burden of saving the situation upon someone else's effort instead of on his own. Accordingly as each industry has gone through a period of serious deflation it in turn has "grabbed" at the buyer, demanding that he "buy now or all is lost."

Everyone in a normal state of mind knows that sales are not made through the seller reciting his troubles. instead they are made when the seller first presents

*National chairman, Public Relations Committee, the National Association of Purchasing Agents.

something of exceptional value to the buyer and thereby causes the latter to want to buy.

There is no surer way of stopping sales than by starting a propaganda campaign.

Taking up the important points set forth in the coal trade's propaganda campaign let us consider the industrial buyers' reaction to them and analysis of the situation.

First is the propaganda statement that a large portion of next winter's requirements must be bought now or there will be a severe shortage of coal this winter with rapidly soaring prices. Industrial buyers do not believe this will happen unless there is a quick radical change in the underlying economic situation. Should any business concern have certain strong, well-organized department and others unable to function properly the lack of proper co-ordination would almost certainly produce a heavy business loss.

The economic situation today is exactly parallel to this. Prices and costs in most of the raw material industries are completely deflated. On the other hand, retail prices are about half way deflated and rents scarcely more than 5 per cent. This being true, the consumers' purchases will continue at a minimum. Every individual who still maintains a home, paying highly inflated rent, has such a large percentage of his income thereby used up that he must do without a corresponding percentage of other things, whether he so desires or not. High rents on business property also help greatly to reduce the consumers' purchasing power, because they represent the major portion of inflation still present in retail prices.

Economic Situation Curtails Purchasing

This distorted condition in the economic situation prohibits the normal spreading out of the purchasing power of the consumer. This greatly reduces consumer buying. This then results in few orders and plants scarcely running. So long as the high rents continue, we cannot get back to a nationally prosperous condition or to a basis of ordering in sufficient volume to cause a severe coal shortage. If all rent and land prices were 50 per cent lower than their present level we would figure on 100 per cent increase in coal consumption.

Second is the propaganda claim that coal prices have reached bottom; therefore, any change in price must be an upward one.

Industrial buyers know that deflation applies to more things than commodity prices. The economic law is that when the price trend turns downward, it goes considerably below the cost of production and *stays there* until deflation in profits, in labor, and in other production costs is completed.

The coal trade believes complete deflation has taken place in the coal industry. Industrial buyers do not believe this, because of their wide range of knowledge concerning what has happened in each of the many important industries. Labor costs are too high on account of the strongly unionized condition of the coal miners.

The coal trade has a particularly difficult task to bring about the necessary deflation in wages. This must be undertaken, however, for the general industrial welfare of the country. There must necessarily be a properly balanced exchange of commodities, so that the workers in each line can exchange their labor through the medium of money for the proper amount of the necessities of life. Accordingly, as a matter of protecting the industrial welfare of the whole country, as well as that of their respective firms, industrial buyers feel it would be the wrong thing to order coal in heavy quantities until coal labor costs have been completely deflated.

A particularly important factor to be straightened out before the industrial buying of coal will begin in heavy quantities is that of high freight rates. In no other commodity used in most industrial plants is the freight rate itself such a large part of the commodity cost. To overcome this condition the coal trade should join hands with the industrial buyer in making the railway executives understand their clear duty. They are now sending out a large amount of propaganda showing that railway rates cannot come down because operating costs are too high. Instead they should cease this aggressively defensive propaganda and direct their efforts toward reducing high labor costs, so that freight rates can be lowered, with resultant benefit to every industry, transportation included.

A matter of vital concern in a situation like the present is that of money or credit. Every firm, large and small, is working under tight credit conditions. This limits each one to a certain small amount of money to invest in future needs when they feel that the trend of price warrants this. Therefore, a careful analysis is made of each of the various raw materials necessary and the expenditure made in the direction which promises the best net return on the amount of money available.

Accordingly, in the competition of the various industries to obtain a portion of money spent for future needs, the coal trade is at a disadvantage compared with copper, tin, lead, cotton and other raw materials, for in those industries the deflation of profits, labor and all producing costs have been carried much further relatively than they have in the coal business.

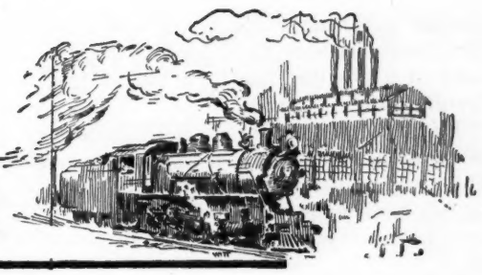
Altruism Is a Poor Business Getter

Moreover, every business man knows that when anyone has a limited amount of money to spend, and one party shows how he can produce a profit; whereas, the second party wants it spent for an altruistic purpose, the former always wins out. For this reason every effort on the part of the coal trade to get industrial purchasing agents to buy coal now from the altruistic purpose of not overloading the railroads when winter comes is not getting results, for the other industries are holding forth the reward of a direct and *sufficient* monetary gain.

Industrial buyers are following closely the course of events, keenly although silently. They are all sharply alert to observe when the next step in the cycle of events will be taken in the coal trade. That next step will follow the recognition that the spreading of propaganda is purely a wasted effort. Then the energy devoted in that direction will be directed toward producing as rapid a deflation as possible in wages and other production costs and of coal commodity rates. When this has taken place, industrial buyers will be able to safely plan their purchases ahead, knowing that no big drop in prices *can* take place suddenly.

This brings us to the final stage of the present cycle through which the whole industry is passing—that is, large and regular purchases of coal by the industrial buyers. Whether that is one month or twelve months away depends upon how quickly the necessary preceding steps are completed. At least it will occur within that range of time.

Production and the Market



Weekly Review

CONSISTENT but slow gains in output of bituminous coal on a market anything but active is a sign of normal recovery. In the past two weeks production, which reached 8,000,000 tons in the week of May 14, dropped slightly to 7,957,000 tons the week of May 21 and, according to preliminary information, again picked up to the 8,000,000-ton mark during the last week of May. Prices in the meanwhile have eased off. *Coal Age* price index, which indicates the trend of the whole spot market, stood at 103 in the second and third weeks of May but dropped three points to 100 in the last week of the month. Since Feb. 1, when the market had completed its drop from the dizzy heights of last autumn, *Coal Age* index has advanced and declined within the narrow limits of 104 as high and 98 as low, but two-thirds of the time has been above 100. In the Middle West, where five out of the nine declines in spot prices are reported this week, oversupply of steam coal resultant from preparation of domestic lump is the cause of the slump.

Despite the relatively heavy call for coal at Hampton Roads on foreign account, prices show no strength. Inland commitments for smokeless coal are light and plenty of free coal is available for Tidewater. Heavy shipments to Tide during the past three weeks have prevented any spurt in prices, but the trade seems satisfied with moving this grade at around $6.25 a gross ton f.o.b. vessels.

Little trading is taking place in Lake coal, but loading at the mines and shipments up Lake continue heavy, largely on account of companies either owning docks or affiliated with large dock interests.

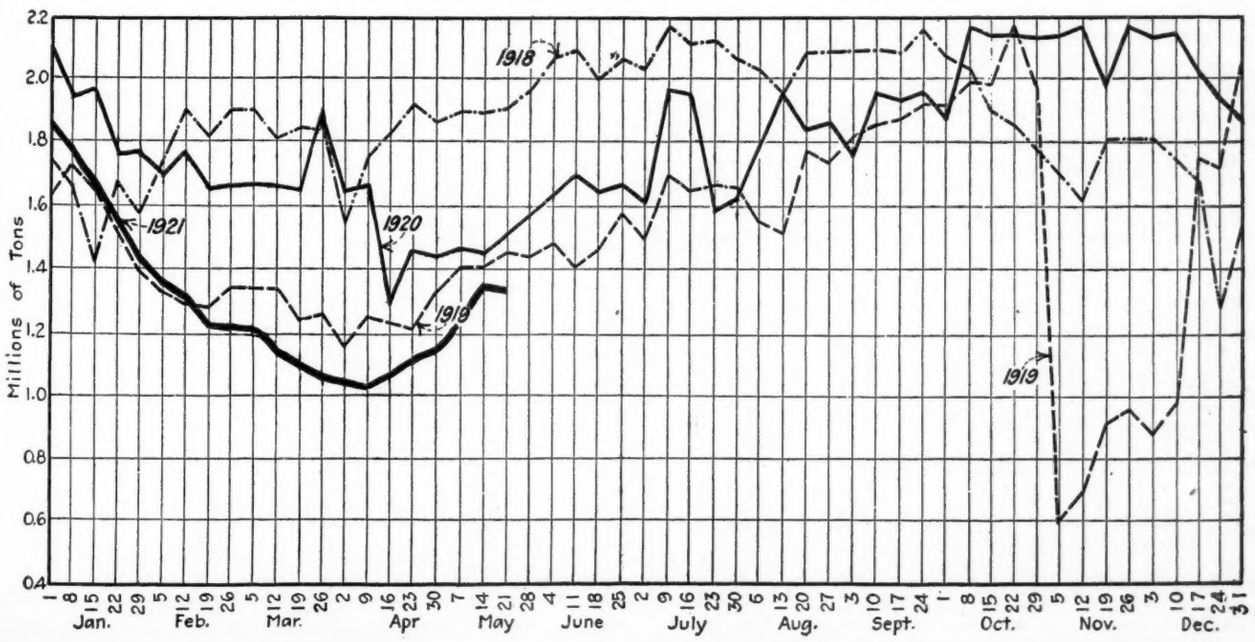
It is reported that dock companies with mine connections are endeavoring to get coal forward to head off the possibility of an acute congestion during the autumn months and that the coal operators are pressing the boat companies to fill their outstanding contracts for deliveries on this market in expectation of a strike by the railroadmen's unions in the event of a reduction in wages becoming effective July 1. Dock prices are off 50c. a ton for summer movement in an effort to keep coal moving and the docks clear for additional receipts.

N. Y. Central and Seaboard Place Contracts

The contract market is slow. Among the railroads the New York Central lines west have closed for 1,000,000 tons of Ohio No. 8 mine run at less than $3 per ton. The Seaboard has closed for 780,000 tons of Alabama coal and the Southern is asking for bids.

All Inland trading is very dull. Retail stocks are growing top-heavy and steam buying is lagging. It is becoming apparent that purchasing agents are delaying

Daily Average Production of Bituminous Coal*



*From weekly report of Geological Survey.

placing any orders which are not absolutely necessary for current consumption for the next few weeks in the hope of a possible readjustment of railroad wages and freight rates.

Everything considered, the bituminous coal market is expected to continue to be very slow, at least through July, while anthracite, which is moving well, is expected to fall down soon after July 1.

BITUMINOUS

It is plainly indicative of conditions in the soft coal trade that of the gain in output of 6,000,000 tons, from 7,400,000 tons the first week of May to 8,000,000 tons the following week, 25,000 tons, or nearly 90 per cent, was in the Northern and Middle Appalachian fields. According to the Geological Survey the most marked improvement was in the eastern Ohio field where average mining time increased from 56.6 to 71.2 per cent. In the Pittsburgh field, the average hours worked increased from 64.0 to 72.5 per cent. Southern Ohio, and both high and low volatile fields in southern West Virginia and the Maryland district gained. Outside of the Appalachians the gains appear to have been in Indiana and the Rocky Mountain region.

Production of bituminous coal in the third week of May is reported as 7,957,000 tons with indication for better than 8,000,000 tons the week ended May 28, as the first two days' loadings exceeded by 2,294 cars the first two days of the preceding week.

It is interesting to note, as pointed out by the Geological Survey, that in the first 120 working days of 1921, production of bituminous coal has been 152 million tons, compared with 164 million in the dull post-armistice period of 1919 and with 210 million in 1917, 215 million in 1918 and 198 million in 1920.

Reports to the Geological Survey from the three coal exchanges at Hampton Roads show that exports of bituminous coal continued to increase during the week ended May 21. A total of 402,034 net tons was dumped for foreign account, consisting of 309,635 tons of cargo coal, and 92,399 tons of foreign bunker. The total was an increase of nearly 11 per cent over the preceding week. Dumpings for foreign account were thus at a rate exceeding that in September, 1920, and approaching the high-water mark set in October of that year.

EXPORT AND FOREIGN BUNKER COAL DUMPED OVER PIERS AT HAMPTON ROADS

(Net Tons)

	Export	Foreign Bunker	Total Foreign
Weekly average:			
September, 1920	271,321	49,756	321,077
March, 1921	87,732	38,744	126,476
April, 1921	137,632	67,960	205,592
Week ended:			
May 7	226,159	135,710	361,869
May 14	283,620	78,785	362,405
May 21	309,635	92,399	402,034

With demand so weak the railroads had little difficulty in supplying the cars asked for, and reports of transportation disability were local in character and negligible in importance. Losses of mine-operating time ascribed to absenteeism of labor, which had increased slightly during the preceding week because of the observance of May Day, dropped down again to less than 1 per cent of full-time capacity.

A general improvement marked the all-rail movement to

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

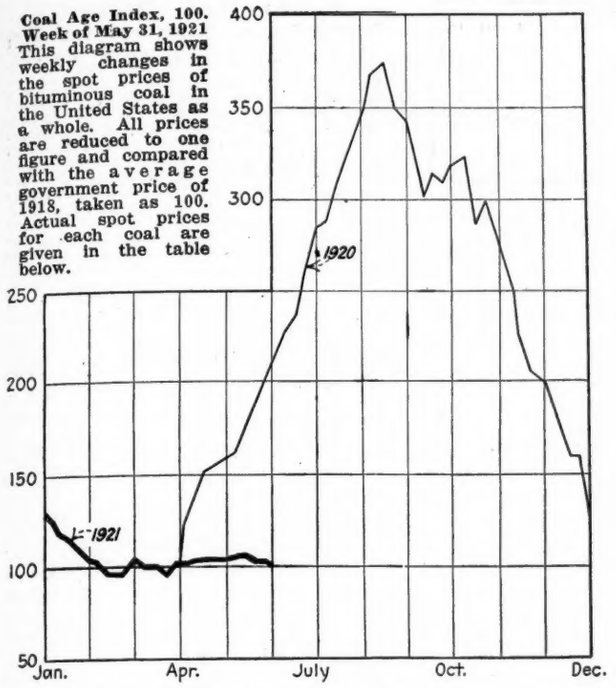
	Market Quoted	Apr. 26 1921	May 17 1921	May 24 1921	May 31 1921†
Low-Volatile, Eastern					
Pocahontas mine run	Columbus	$3.35	$3.60	$3.50	$3.50
Pocahontas lump	Columbus	5.25	5.60	5.50	**5.50@ 6.00**
Pocahontas mine run	Chicago	4.00	4.00	3.75	3.00@ 4.50
Pocahontas lump	Chicago	5.00	5.25	5.25	5.00@ 5.50
*Smokeless mine run	Boston	5.75	6.40	6.40	**6.25@ 6.70**
Clearfield mine run	Boston	2.20	2.40	2.40	*1.85@ 2.80*
Somerset mine run	Boston	2.80	2.90	2.90	**2.60@ 3.25**
Pool 1 (Navy Standard)	New York	3.50	3.40	3.55	*3.35@ 3.50*
Pool 1 (Navy Standard)	Philadelphia	3.40	3.25	3.25	**3.00@ 3.65**
Pool 1 (Navy Standard)	Baltimore	3.10	3.30	3.35	*3.30*
Pool 9 (Super. Low Vol.)	New York	2.75	2.80	2.85	*2.65@ 2.85*
Pool 9 (Super. Low Vol.)	Philadelphia	3.05	2.90	3.00	*2.75@ 3.10*
Pool 9 (Super. Low Vol.)	Baltimore	2.95	3.00	3.05	*3.85@ 3.10*
Pool 10 (H. Gr. Low Vol)	New York	2.55	2.55	2.60	2.40@ 2.75
Pool 10 (H. Gr. Low Vol.)	Philadelphia	2.75	2.70	2.70	*2.45@ 2.75*
Pool 10 (H. Gr. Low Vol.)	Baltimore	2.45	2.55	2.50	*2.40@ 2.50*
Pool 11 (Low Volatile)	New York	2.20	2.15	2.25	*2.00@ 2.25*
Pool 11 (Low Volatile)	Philadelphia	2.45	2.45	2.45	*2.25@ 2.40*
Pool 11 (Low Volatile)	Baltimore	2.30	2.30	2.25	2.20@ 2.35
Pool 71 (Navy Sup'mntal)	New York	2.95	3.00	3.00	2.75@ 3.25
Pool 71 (Navy Sup'mntal)	Philadelphia	3.30	3.00	3.00	2.00@ 3.10
Pool 71 (Navy Sup'mntal)	Baltimore	3.00	3.20	3.20	*2.76@ 2.95*
High-Volatile, Eastern					
Pool 34 (54-64) (H. Vol. Gas and Steam)	New York	2.00	2.00	2.05	*1.85@ 2.10*
Pool 34 (54-64) (H. Vol. Gas and Steam)	Philadelphia	2.15	2.10	2.10	2.00@ 2.20
Pool 34 (54-64) (H. Vol. Gas and Steam)	Baltimore	2.15	1.90	1.90	1.80@ 1.95
Pittsburgh mine run	Pittsburgh	2.25	2.10	2.10	*1.85@ 2.00*
Pittsburgh sc'd gas	Pittsburgh	$2.85	$2.70	$2.80	*$2.50@$2.75*
Kanawha mine run	Columbus	2.25	2.30	2.65	*2.25*
Kanawha lump	Columbus	3.50	3.40	3.40	**3.25@ 3.75**
Hocking mine run	Columbus	2.20	2.20	2.40	*2.25*
Hocking lump	Columbus	3.35	3.30	3.25	**3.25@ 3.50**
Pitts. No. 8 mine run	Cleveland	2.20	2.30	2.25	2.15@ 2.35
Pitts. No. 8 lump	Cleveland	3.40	3.15	3.25	3.00@ 3.50
Midwest					
Franklin, Ill., mine run	Chicago	3.40	3.25	3.15	*2.50@ 3.50*
Franklin, Ill., lump	Chicago	3.55	3.70	3.70	*3.45@ 3.85*
Central Ill., mine run	Chicago	2.75	2.60	2.60	*2.00@ 2.75*
Central Ill., lump	Chicago	3.00	3.25	3.25	*2.75@ 3.25*
Ind. 4th Vein mine run	Chicago	2.75	3.10	3.10	*2.50@ 3.25*
Ind. 4th Vein lump	Chicago	3.25	3.50	3.50	*2.75@ 3.50*
Ind. 5th Vein mine run	Chicago	2.75	2.50	2.50	2.25@ 2.75
Ind. 5th Vein lump	Chicago	3.00	3.25	3.25	*2.25@ 3.25*
Standard mine run	St. Louis	1.80	1.90	1.75	1.75
Standard lump	St. Louis	2.40	2.50	2.40	2.25@ 2.50
West Ky. mine run	Louisville	2.25	2.00	2.20	*1.90@ 2.25*
West Ky. lump	Louisville	3.00	2.65	2.65	*2.35@ 2.75*
South and Southwest					
Big Seam mine run	Birmingham	2.95	2.95	2.95	2.85@ 3.10
Big Seam lump	Birmingham	3.60	3.70	3.70	*3.55@ 3.75*
S.E. Ky. mine run	Louisville	2.75	2.60	2.60	*2.25@ 2.50*
S.E. Ky. lump	Louisville	3.75	3.75	3.90	*3.75@ 3.85*
Kansas mine run	Kansas City	4.40	4.40	4.15	**4.25**
Kansas lump	Kansas City	5.00	5.00	5.00	5.00

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advance over previous week shown in **heavy type**, declines in *italics*.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

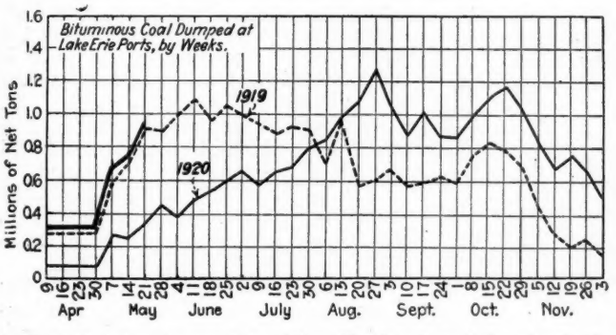
	Market Quoted	Freight Rates	May 17, 1921 Independent	May 17, 1921 Company	May 24, 1921 Independent	May 24, 1921 Company	May 31, 1921† Independent	May 31, 1921† Company
Broken	New York	$2.61	$7.45@$7.75	$7.20@$7.75	$7.45@$7.75	$7.20@$7.75	$7.45@$7.75	$7.20@$7.75
Broken	Philadelphia	2.66	7.60@ 8.35	7.35@ 7.75	7.60@ 8.35	7.35@ 7.75	**7.90@ 8.20**	7.35@ 7.75
*Broken	Chicago	5.62	12.65	12.40	12.65	12.40	12.65	12.40
Egg	New York	2.61	7.45@ 8.35	7.20@ 7.75	7.45@ 8.35	7.20@ 7.75	7.45@ 8.35	7.20@ 7.75
Egg	Philadelphia	2.66	7.60@ 8.35	7.35@ 7.75	7.60@ 8.35	7.35@ 7.75	**7.90@ 8.20**	7.35@ 7.75
*Egg	Chicago	5.62	12.70	12.35	12.50	12.35	12.50	12.35
Stove	New York	2.61	7.70@ 8.35	7.50@ 8.10	7.70@ 8.35	7.50@ 8.10	7.70@ 8.35	7.50@ 8.10
Stove	Philadelphia	2.66	7.85@ 8.35	7.70@ 8.10	7.85@ 8.35	7.70@ 8.10	**8.15@ 8.60**	7.70@ 8.10
*Stove	Chicago	5.62	13.00	12.70	13.00	12.70	13.10	12.70
Chestnut	New York	2.61	7.85@ 8.35	7.50@ 8.10	7.85@ 8.35	7.50@ 8.10	7.85@ 8.35	7.50@ 8.10
Chestnut	Philadelphia	2.66	7.85@ 8.35	7.65@ 8.10	7.85@ 8.35	7.65@ 8.10	**8.15@ 8.50**	7.65@ 8.10
*Chestnut	Chicago	5.62	12.85	12.60	12.85	12.60	12.85	12.60
Pea	New York	2.47	5.25@ 6.00	5.75@ 6.10	5.00@ 5.85	5.75@ 6.10	**5.00@ 6.00**	5.75@ 6.10
Pea	Philadelphia	2.36	6.00@ 6.25	6.00	5.75@ 6.00	6.00	**5.75@ 6.25**	6.00
*Pea	Chicago	5.62	10.80	10.70	10.80	10.70	10.80	10.70
Buckwheat No. 1	New York	2.47	3.00@ 3.75	3.50	3.00@ 3.75	3.50	*3.00@ 3.50*	3.50
Buckwheat No. 1	Philadelphia	2.36	3.50	3.50	3.25@ 3.50	3.50	*3.00@ 3.50*	3.50
Rice	New York	2.47	2.40@ 2.50	2.50	2.25@ 2.50	2.50	2.25@ 2.50	2.50
Rice	Philadelphia	2.36	2.50	2.50	2.50	2.50	2.50	2.50
Barley	New York	2.47	1.15@ 1.50	1.50	1.15@ 1.50	1.50	*1.15@ 1.35*	1.50
Barley	Philadelphia	2.36	1.50	1.50	1.50	1.50	1.50	1.50
Birdseye	New York	2.47	2.50	2.50	.....	2.50	.....	2.50

* Prices and freight rates net tons; quotations f.o.b. cars, Chicago. † Advance over previous week shown in **heavy type**, declines in *italics*.


Coal Age Index, 100. Week of May 31, 1921
This diagram shows weekly changes in the spot prices of bituminous coal in the United States as a whole. All prices are reduced to one figure and compared with the average government price of 1918, taken as 100. Actual spot prices for each coal are given in the table below.
400
350
300
250
200
150
100
50
1920
1921
Jan.
Apr.
July
Oct.
Dec.

New England during the week ended May 21, according to the American Railway Association. Shipments of 3,461 cars of anthracite and 3,088 cars of bituminous coal were forwarded through the rail gateways over the Hudson. This was an increase over the preceding week of 163 cars and 388 cars, respectively. Anthracite shipments were well in excess of those in the corresponding week of 1920, but bituminous shipments were less by 1,297 cars.

According to the Geological Survey, stocks of gas coal in the hands of gas plants, other than byproduct, in New England ranged from more than 12 weeks' supply in Massachusetts to over 17 weeks' in Maine and New Hampshire on April 1. This represents a substantial increase as of April 1 over Jan. 1 of this year for New England.



Spot buying is weak in New England, but is steady in the New York market. Further south, at Philadelphia and Baltimore, steam demand is weak, as is true at Columbus and all Middle Western cities.

ANTHRACITE

Production declined during the week ended May 21, the total output being 1,794,000 net tons as compared with 1,938,000 tons for the week preceding, a decrease of 144,000 tons, attributed to labor conditions. The cumulative output for the calendar year stands at 35,585,000 net tons, about a million and three quarter tons ahead of 1920.

Midsummer Slump in Anthracite Likely

Current demand is strong for all domestic sizes but indications point to a mid-summer slump. Independent coal is going at a premium—in Philadelphia last week the market on these grades advanced almost 75c. Steam sizes are moved with increasing difficulty although not much is going to storage. Quotations for independent steam coals show a slight softening, but company schedules are being maintained. Domestic coals will be advanced this month although at this writing no announcement has been made as to the amount of the increases for June.

COKE

Beehive coke output is apparently at the irreducible minimum, having been around 70,000 tons a week for some time past. H. C. Frick has shut down all ovens in the Connellsville region and is shipping coal by water to the Steel Corporation's Clairton byproduct plant. The present meager output of beehive is going in driblets to iron furnaces and foundries, for which business competition is quite sharp. Were it not for the differentials in freight, favoring beehive coke over byproduct oven coal, it is understood the ovens would be more generally shut down at this time than is the case.

The Seaboard Air Line Ry. has not awarded contracts as yet for its fuel for the coming year. The proposals call for a minimum of 1,132,000 tons and a maximum of 1,548,900 tons. About four hundred bids have been received, according to officials of the company, but all of them have not been checked over. The purchasing agent declines to discuss the low bids as yet, but stated that the high bids ranged from $3.75 to $4 at the mines. It is reported, however, that some bids were as low as $2.40 for large tonnages. It should be noted that the Seaboard buys in Alabama, where costs and therefore prices are higher than in Virginia and West Virgnia, where the greater part of the fuel for this road is obtained. Until complete details of bids by fields are available, no estimate of the contract market can be considered finally disclosed by these reports.

Director Bain of the Bureau of Mines in favoring an appropriation for investigation of heavy clay products said it was hoped to continue the effort to cut fuel consumption which was started during the war in connection with the Fuel Administration. He said that from 30 to 50 per cent of the cost of making brick was chargeable to fuel and that progressive brick plants were cutting down fuel costs by using waste heat. Engineers of the Bureau say the use of fuel can be reduced in brick plants, which would mean a saving of 20 to 30 per cent in that regard.

Estimates of Production

From the Weekly Report of the Geological Survey

(Net Tons)

BITUMINOUS COAL

Total Bituminous, Including Coal Coked

	1921 Week	1921 Calendar Year to Date	1920 Week	1920 Calendar Year to Date(a)
May 7 (b)	7,391,000	136,461,000	9,167,000	180,171,000
Daily average	1,232,000	1,266,000	1,528,000	1,664,000
May 14 (b)	8,003,000	144,464,000	8,764,000	188,935,000
Daily average	1,334,000	1,269,000	1,461,000	1,653,000
May 21 (c)	7,957,000	152,421,000	9,246,000	198,181,000
Daily average	1,326,000	1,272,000	1,541,000	1,647,000

(a) Less 2 days' production during first week in January, to equalize number of days covered for the last two years. (b) Revised from last report. (c) Subject to revision.

ANTHRACITE

	1921 Week	1921 Calendar Year to Date	1920 Week	1920 Calendar Year to Date (a)
May 7	1,633,000	31,853,000	1,891,000	30,105,000
May 14	1,938,000 (b)	33,791,000	1,774,000	31,879,000
May 21	1,794,000 (b)	35,585,000	1,847,000	33,726,000

(a) Less 2 days' production during first week in January to equalize number of days covered for the last two years. (b) Subject to revision.

BEEHIVE COKE

Week Ended May 21 1921(a)	Week Ended May 14 1921(b)	Week Ended May 22 1920	1921 to Date	1920 (c) to Date
70,000	69,000	416,000	3,059,000	8,503,000

(a) Subject to revision. (b) Revised from last report. (c) Less 2 days' production during New Year's week to equalize number of days covered for the last two years.

Foreign Market And Export News

Shanghai Market Report

Japanese Coal Quiet, But Receipts Too Heavy for Storage Facilities—Kaiping Situation Better—Prices Are Firm.

Demand for Japanese coal is very low, according to Wheelock & Co.'s Shanghai market letter of April 21, 1921. Stocks are increasing so rapidly that it is difficult to find accommodation at the wharves for new cargoes arriving. A certain amount of Fushun unscreened coal is still available, but no more dust. There is no market change in Fuchung anthracite.

Kaiping coal is in better call at firm prices. Railway facilities in the North have steadily improved and deliveries are being made readily.

Prices are quoted as follows:

	Taels per Ton ex Wharf
JAPAN COAL	
Miike lump, Miike small, Miike dust	Contracted for
Kishima lump	16.00
Shakano lump	15.00
Arate lump	14.00
Shimoyamada kirigomi	13.00
Shin Shakano kirigomi	13.00
Yoshinotani No. 1 lump	14.00
Yoshinotani No. 2 lump	12.00
Ochi lump	14.50
KAIPING COAL	
No. 1 lump	Contracted for
No. 2 lump	$11.50
Washed nuts	13.50
Washed slack	10.50
No. 1 slack	8.50
No. 2 slack	8.00
FUSHUN COAL	
Dust	10.00
Kirigomi	No stock; contract 11.50
Lump	No stock
FUCHUNG (ANTHRACITE) COAL	
Nos. 1, 2 and 3 cobbles	14.00
Boiler coal	13.50
Dust coal	9.50

Germany's March Output Declines

But First Quarter's Production in 1921 Approaches Pre-War Basis—Communist Outbreaks Cause Loss—Negotiate Extra Shift Question.

Production in the Ruhr Basin and Upper Silesia in March fell considerably short of that for the preceding month. In the Ruhr Basin this was caused by the discontinuance of the extra shifts from the middle of March, and by the communist troubles of that month. Numerous mines were for days out of operation on account of attempts at intimidation. Upper Silesia suffered from the general unrest of the province due to the plebiscite. The smaller districts registered an advance in most cases.

Ruhr producton was 7,535,000 tons in 25 days, as against 8,174,600 tons in 24 days of February. Transportation improved in spite of the low water level of the Rhine. The relation of the first three months of 1921 to the corresponding period of preceding years, and to pre-war production, is shown by the following figures, in thousands of metric tons:

	1914	1918	1919	1920	1921
January	9,585	8,629	6,263	6,688	8,073
February	8,910	8,017	5,431	6,876	8,175
March	9,451	8,469	6,300	6,398	7,535
Total	27,946	25,115	17,994	19,962	23,783
Per cent	100	90	64.5	71.6	85.2

These figures illustrate the steady recovery since the slump in 1919. Returns from January to March, 1921, have reached 85.2 per cent of those of the corresponding time of the last pre-war year, however, it must be considered that the number of miners has increased by nearly 100,000 since then.

The March output in Upper Silesia was 2,696,072 tons, as against 2,835,934 tons in March, 1920, and 3,722,699 in March, 1913. In the Lower Silesian Basin it was 416,957 tons, compared with 483,448 tons in March, 1913. The Saxon fields produced 376,322 tons as against 372,511 in the same month of last year, and 416,066 tons in March, 1913. The output of the Lower Rhine fields was 219,245 tons, compared with 264,380 tons in March 1913. Total March production was as follows:

	Tons
Ruhr Basin	7,535,000
Upper Silesia	2,696,072
Lower Silesia	416,957
Saxony	376,322
Lower Rhine	219,245
Total	11,243,596

Production for the first three months of 1921 was as follows:

	Tons
January	11,985,534
February	11,943,371
March	11,243,596
Total	35,172,501

The new agreement which has been in course of negotiation between the Colliery Owners' Union and the miners' representatives in the Ruhr has not yet been definitely settled. As provisionally approved, the agreement provides for the working of overtime, beginning with four hours weekly and gradually declining to two hours per week, down to the period ending with March 31, 1922. Underground men are to receive extra wages for this overtime to the amount of 100 per cent, and surface workmen 50 per cent. In addition, food products at reduced prices will continue to be supplied, and the wages will be increased for time workmen by from 1.50 marks to 8 marks per shift for those over 20 years of age.

SOUTH WALES operators are making no export quotations and owners generally are refusing to consider any business on deliveries running far in the future.

Hampton Roads Clearances

The following vessels cleared with coal during the week ended May 25:

Taizan Maru, Jap., for Lisbon, 3,567 tons; Sierentz, Fr., for Leith, 7,177 tons; Gaelic Prince, Br., for port in England, 7,869 tons; Bradavon, Br., for Algiers, 7,043 tons; Yselhaven, Du., for Hamburg, 6,728 tons; Andalusia, Swed., for Santiago, 2,134 tons; Hofuku Maru, Jap., for Port Said, 7,123 tons; Valdura, Br., for Alexandria, 6,402 tons; Cohaset, Am., for Falmouth, 6,798 tons; Jomar, Am., for Glasgow, 5,789 tons; Lord Dufferin Br., for Aberdeen, 5,835 tons; Novington, Br., for Buenos Aires, 4,838 tons; Fremantle, Fr., for Rio de Janeiro, 7,133 tons; Karen Roegenes, Nor., for Cork, Ireland, 3,243 tons; Georges Mantacas, Gr., for Gibraltar, 4,878 tons; Africanic, Swed., for Rosario, 4,826 tons; Piave, It., for Dakar, 6,855 tons; Iskra, It., for Gibraltar, 5,775 tons; Athanasios, Grk., for Rio de Janeiro, 6,203 tons; Catinat, Fr., for Rio de Janeiro, 10,031 tons; Eirene, Br., for Algiers, 5,473 tons; Penrhys, Br., for Rio de Janeiro, 5,006 tons; Guilford D. Pendleton, Am. Schr., for Faya, 1,987 tons; Pacific, Nor., for Rio de Janeiro, 8,068 tons; Ancona, It., for Italy, 6,115 tons; Lexington, Br., for Liverpool, 954 tons; Grelisle, Br., for London, 6,372 tons; Albany, Br., for Buenos Aires, 5,256 tons.

C. I. F. prices, quoted at this port, for the same period were reported as follows: United Kingdom $12,75, Copenhagen 12.75, Antwerp and Rotterdam $11.50, French Atlantic $12, Lisbon $12, Algiers $13, West Italy $13.25, Marseilles $13.25, Piraeus $14, Port Said $14, Alexandria $14, Gibraltar $12.50, Rio de Janeiro $11.75, Buenos Aires $11.75, Havana $9.50, Kingston $10, St. Thomas $10.50.

South African Market Is Better

Good Stocks on Hand—Pooling System Favored—Another Freight Reduction for Bunker Coal.

Improvement in the South African coal situation is reported in a cablegram from Capetown. Bunker coal is quoted at 42s. 9d. and export coal at 29s., free at ship, Durban, with good stocks on hand. The Government Coal Commission in a report recommends the formation of a pooling system as tending toward a stabilization of prices and greater regularity in output, etc. The report is accompanied by a short draft bill, which it is understood will shortly be introduced in Parliament.

The total coal sold in February in the Union of South Africa amounted to 894,230 net tons, as compared with 979,990 tons in the first month of 1921.

A reduction, effective April 6, has been made in the railway rate for bunker coal to Union ports and Laurenço Marques. The reduction amounts to 6s. 6d. per net ton. There are no changes in existing rates for export cargo coal or for fuel utilized in bunkering ships carrying full cargoes of export coal. The foregoing reduction in bunker coal rates makes a total reduction of 15s. 5d. per ton from the rates in force prior to Feb. 7, 1921.

SPAIN'S NEW TARIFF REGULATIONS, effective May 20, raise the tariff on foreign coal 5 pesetas per ton for briquets and 10 pesetas for nut coal. Run these 4 copies continuous

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THE SWISS FEDERAL GOVERNMENT has recalled all restrictions as to the importation of coal, which may now be imported again by the general trade.

Reports From the Market Centers

New England

BOSTON

Fewer Purchases — Occasional Weakness in Prices — Coastwise Tugs Practically All in Operation — Anthracite Retail Trade Confined to Larger Orders.

Bituminous—While a week ago there developed scattering spot purchases, there is today much less interest in the current market. Operators are trying hard to secure business for June and July, but steam-users are disposed now to wait another month or six weeks before adding to their present stocks. In certain special lines of textiles there is more business in sight than hitherto this year; most of the industries, however, suffer from the same inactivity that is characteristic of steam coal this season.

Here and there may be recognized new low figures for medium to fair Pennsylvania grades, particularly for all-rail delivery. This condition is spotty and is by no means horizontal. The better established producers as a rule have not yet been forced to modify spot quotations, but it is quite possible they too will be obliged to meet conditions during this month. Spot quotations are shown in the Weekly Review.

Factors here have about given up trying to make contracts on a ten-month basis and buyers are besieged by salesmen who urge the great need of piling up fuel while it can be had. Producers are not so much impressed because they know their present stocks average larger than in January and with no favorable turn in general business in near prospect there is every inducement for them to postpone buying.

Demand for Pocahontas and New River is also easier than a fortnight ago. There is less inquiry off-shore, and notwithstanding the marine strike there is no anxiety whatever over the light tonnage lately dumped for New England. There are plenty of large schooners available in place of steamers that are tied up and since these sailing vessels are able to operate at a much lower cost there is reason to think they will be more generally used the balance of the season than was thought possible in April.

So far as coastwise tugs are concerned, the marine strike has virtually petered out. The last remaining boats that were affected by the strike order sailed from Norfolk last week and even certain of the larger steam colliers have been able to operate with non-union help. The bituminous market is in altogether too comfortable shape for buyers to be caused any uneasiness now merely because of union action against the reduction of wages.

Anthracite — Domestic sizes, especially egg and stove, continue in good request, but there are signs of a slightly less demand the latter part of June. Much depends upon the public attitude toward retail buying; just at this time small householders in general are taking coal only for temporary needs.

Dealers in the cities find that the average family is influenced partly by lack of ready money and partly by the newspaper stories that anthracite, in line with other commodities, is certain to be lower in price. It is quite probable that there will be a market let-up in demand during July, if not earlier.

Tidewater—East

NEW YORK

Good Demand for Anthracite, Domestic —Some Expect Early Slump in Activity—Bituminous Quiet—Demand Slow, but Quotations Firm—Gas Coal Wanted for Export.

Anthracite—There has been no let up in the demand for domestic. More coal could be easily taken care of by the dealers as most consumers now realize that the chances of buying at lower prices are small. The yards contain large stocks of chestnut and pea but the supply of egg and stove is limited.

Despite the present activity for the prepared coals there are some in the trade who look for a slowing down soon. Producers have plenty of orders to keep the mines going for several weeks and shippers of independent coals are flooded with orders. Inland demand is active. All sizes with the exception of pea are quickly absorbed. Buying is reported slow in New England.

The independent mines, in nearly all instances, are working five days or better. Consumers in this state are not likely to pay the new Pennsylvania State Tax on anthracite until the law has been tested through the courts by State Attorney General Charles D. Newton.

Some shippers of independent coals are booking orders for July delivery at the then current prices. The movement of steam is slow and no relief is expected until September. Barley is the longest of the three coals. There are many loaded boats here and it is expected they will force quotations lower. Loaded cargoes of rice were quoted $4.50@$4.90 and barley $3.50@$3.90. Current mine quotations are reported in the Weekly Review.

Bituminous—While buying for local consumption is light the movement in some grades shows a slight improvement. Distress coal caused an easing in the quotations towards the end of the week but there was a quick recovery. Some of the cheaper coals are scarce, due to the mines not working while the better grades are not being allowed to accumulate.

Demand for export is not developing as rapidly as expected, although the better grades of gas coals are being sought. Westmoreland gas was quoted around $3 for export and Pool 10 was quoted $6.15@$6.50 for export from the lower ports.

Loaded boats are increasing and unless demand shows considerable new strength soon these will have a tendency to still further lower quotations.

So far as deliveries are concerned, the Marine strike in this harbor did not cause any trouble. Transatlantic liners and other vessels suffered no delay in sailing because of the non-delivery of fuel, but there was a slight decrease in the demand for bunker fuel because of delay in some instances to secure full crews for the ships.

There was a good demand for the better grades of gas coals for domestic consumption and an easing in the call for slack. Wholesalers are receiving many inquiries regarding the present market conditions and the future prospects of getting coal. While orders have been slow shippers look for a revival in the near future.

Quotations, gross tons, f.o.b. this harbor range about as follows: Pool 71, $6.05@$6.15; Pool 9, $5.80@$6; Pool 10, $5.60@$5.80; Pool 11, $5.35@$5.50. For Pool 10 outside of the pool loaded in bottoms quotations from $5.85@$5.95 were reported.

PHILADELPHIA

Anthracite Demand Continues Brisk—Some Indications of Falling Off—Independent Price Increases — Bituminous Remains Quiet — Slight Price Fluctuations.

Anthracite—Some retail dealers say that conditions are actually slow, others report a slackening of orders, but there are still a few who claim to be quite busy and see no reason why they should not continue so. On the whole we are certain that there has been a slowing down and that it will continue from now on to mid-summer.

The trade has really been buoyed up lately by an agitation in the local newspapers, several of them taking the stand that there is a "buyer's strike" among the consumers. First-page prominence has been given to "investigations" warning the operators that it is all due to high prices. All in the trade know that for the entire spring the demand has been extremely active, and far from being a buyer's strike, they have been unable to get sufficient coal to fill their orders right up to this time. The newspaper articles have actually given temporary stimulus to the buying rather than otherwise.

Some of the independents have announced new price schedules effective June 1. Some of the increases were quite heavy, in a few instances as much as 75c. Customers of these concerns were surprised at the advances, for while they expected something, no one thought it would be more than 25c. at the most. It also seems likely that at least two of the larger companies will add 10c. to their prices for June, but up to this time no announcement has been made.

Steam coals are still heavy, with buckwheat the best seller, but even much of this size is going into storage. Company price holds firm, but some independent buckwheat has been sold at $3. Rice and barley fail to improve.

Bituminous—There is no actual sign of change in the market. There is undoubtedly much improvement in certain industrial lines, but even those concerns are only buying meagerly.

Producers are making every effort to induce storage and even though the buyer realizes the necessity, he fails to act in sufficient volume to make any noticeable improvement in trade. So far as contract coal is concerned more coal men are becoming converted to the attitude that the more free coal they have by next fall the more profitable their showing for the year will be.

There have been some spot fluctuations recently, although the prices on an average are quite close to those obtaining for the past six or eight weeks. If anything there has been a tendency to a strengthening and most dealers have learned the futility of shaving the figures any lower to induce business. At Tide there is little activity outside of bunkering and even this is much below normal.

BUFFALO

No Change in Bituminous Situation—Business Awaits Further Adjustment—Buying Is Very Light—Anthracite Dull—Independents Get Premium.

Bituminous—Demand is as light as ever and there is no indication of improvement right away. The small stir that some members of the trade thought they saw some weeks ago has come to nothing. The inference is that the business of the country does not warrant the use of more coal as yet and that a pretty general stir must be made all along the line to set coal moving.

Complaint is heard of the Canadian trade. It is not only small in volume, but the pay is slow, when it ought to be prompt, for the shipper must make all freight payments in advance to the boundary line and then take chances on rejection or some complaint that will cut down the profits to nothing, if any existed to begin with.

It is agreed that stocks are running down and if something should happen to reduce rail efficiency there would be any amount of consumers out of coal in a very short time. So the jobber urges his customers to keep a fair supply on hand, though he has to stand in with the consuming trade pretty closely to escape the inference that he is merely trying to make a sale. Prices are unsteady on the basis of $3.50 for Youghiogheny gas lump, $3 for Pittsburgh steam, and $2.75 for No. 8 lump, $2.60 for Allegheny Valley steam mine run, and $2 for slack. Freight rates added are $2.36 for Allegheny Valley and $2.51 for all other districts.

Anthracite—Shippers complain that the buying is not sufficient to keep mines running as they should in order to make sure of a safe supply in cellars when cold weather comes on. Consumers feel that prices are so high that they cannot afford to buy, and also that lower prices will be made before winter. So, as they do not need coal now, they hold off.

The Lake trade shows satisfactory activity, so far as loading coal is concerned. A good many of the coal cargoes are allowed to lie here indefinitely, waiting till there is freight to bring down. Shippers do not like the idea, as it ties up a large amount of coal, perhaps for some months to come.

Lake loadings for the week ended May 21 were large, totaling 155,100 net tons, of which 61,900 tons cleared for Duluth and Superior, 56,500 for Milwaukee, 26,300 for Chicago, 7,500 for Escanaba and 2,900 tons for Racine.

Coke—The market continues dull, only now and then an order being obtained by local jobbers. As a rule the furnaces are closed. They are now shipping out some iron by canal, when at the opening they reported none to ship.

BALTIMORE

Export Situation Promising and Will Surpass April Record—Soft Coal Trading at Home Very Flat—Prices Fall—Retail Anthracite Trade Again Assailed.

Bituminous—The rapidly enlivening export market relieves the otherwise extremely flat trading situation at Baltimore. For the first twenty-three days of May, as tabulated by the Custom House, twenty-six ships sailed with coal cargoes for foreign ports, carrying a total of 150,631 tons cargo and 20,853 tons bunker. Nine of the cargoes were destined to England and two to Ireland. This shipment is already considerably in excess of the April movement, for which the re-checked figures of the railroad dumpings were 103,736 tons cargo. The total dumping as reported by the railroads at this point in April was 227,015.

Outside of the export situation soft coal trading is very listless. Pool 9, which under the abolishment of Pool 71 took over those fuels, is offering in many cases below the $3 mark. Good coals running to Pool 10 are on the market around $2.40 in many cases. Gas coals are also very weak, excellent ¾-in. lump of Pennsylvania origin offering as low as $2.85.

Anthracite—The hard coal men of Baltimore, despite the fact that in May they absorbed some heavy wholesale advances and made no increase at retail from the April schedule, are the subject of attack. One of those intermittent kind of Congressmen whose voice must sometimes reach the galleries has asked the State's Attorney of Baltimore to investigate the price of hard coal at retail in this city, charging that there is an unholy combination for unjust profits.

The move is taken none too seriously in view of the fact that the gross profit of dealers is now less than that set by the Government under Federal regulation as a fair margin of trading. As for June prices, the situation at this point is awaiting action of the wholesale interests, both company and independent. If the June wholesale increase is small this might be absorbed, but the prospects seem to be that the wholesale advance will be such as to force a higher retail schedule. Meanwhile the public continues to show lack of buying interest.

HAMPTON ROADS

Increased Movement to Piers—Prices Soften—England Gets Bulk of Shipments.

A total of 445,407 tons passed over the piers during the week ended May 25, which is a high record for the last six months. In spite of this increasing activity, the prices of Pools 1 and 2 failed to hold, being offered as low as $6.30 at the end of the week.

Shippers, realizing the increased activity, rushed large tonnages to Tidewater, with the result that the local market is threatened with a surplus. Pools 5, 6 and 7 held this week at the usual price, $5.50@$6. Inquiries have been more frequent than at any time for the last two months.

Shipments to England have consumed almost the entire market during the week—together with movement to ports for ultimate consignment to British possessions. American ships are now moving easily in spite of the efforts of the American seamen to tie up shipping until the steamship owners should come to their terms.

The week ended May 26 showed the situation at the coal piers as follows:

N. & W. piers, Lamberts Point—	
Cars on hand	1,555
Tons on hand	74,436
Cars dumped May 1 to 25, incl.	9,563
Tons dumped same period	573,933
Tonnage waiting	23,985
C. & O. piers, Newport News—	
Cars on hand	1,854
Tons on hand	92,360
Cars dumped May 1 to 25, incl.	8,946
Tons dumped same period	481,048
Tonnage waiting	23,200
Virginian Ry. piers, Sewalls Point—	
Cars on hand	1,527
Tons on hand	76,350
Cars dumped May 1 to 25, incl.	8,456
Tons dumped same period	422,827

Canada

TORONTO

Trade Light for the Season—Moderate Supplies Coming Forward—Shortage of Stove Coal.

The coal trade continues light for the season with orders for anthracite coming in slowly but in sufficient

volume to keep dealers fairly busy. Moderate supplies of anthracite are being received from the mines and the yards are generally well stocked with nut and egg, although the supply of stove is not equal to the demand. There is no change in the situation as regards bituminous, which is selling very slowly.

Quotations for short tons are as follows:

	Retail
Anthracite egg, stove, nut and grate	$15.50
Pea	14.00
Bituminous steam	11.25@11.75
Domestic lump	12.50
Cannel	16.00
Wholesale f.o.b. cars at destination	
3-in. lump	7.76@ 8.75
Slack	6.50@ 7.00

Northwest

MILWAUKEE

Market Is Quiet, with Light Demand—Contracts Awarded for City Supplies—Receipts by Lake Continue Liberal.

There is little demand for present use, as the weather is very warm. Dealers are doing their best to stimulate buying for next winter's needs, but it is a little too early to expect consumers to take to this seriously.

Contracts calling for 68,949 tons of bituminous and semi-bituminous for the use of city departments and the school board have just been awarded. The prices are much lower than those paid last year. In the accepted bids semi-bituminous will cost $7.73 per ton, and screenings $5.85. Bids submitted for 1,964 tons of anthracite were rejected because the low bid was qualified and did not name a fixed price. Prices ranged from a maximum of $15.65 down to $11.35. New bids on anthracite will be requested. Smithing, coke and various other grades of coal for special purposes were offered at prices ranging from $5.49 for screenings to $14 for coke.

Receipts by Lake continue heavy. Thus far this season 189,146 tons of anthracite and 541,032 tons of soft coal have been received, against 96,490 tons of anthracite and 125,158 tons of soft coal, during the same period last year. Coal men are combating the bill now pending which, if passed, would make it necessary for dealers to specify the amount of heat units represented in their product.

DULUTH

Slow Movement Off Docks—Bituminous Prices Drop—Anthracite Situation Unsatisfactory.

Because of the slowness of the movement of coal from the docks, and the consequent crowding of the landing and storage piers a probable shortage is looked for by dock men at the Head of the Lakes, and steps are being considered to better the situation by whatever methods possible. Shipments to the harbor continue strong, with 44 boats docked in the past week, six of which were loaded with anthracite, and 30 on the way from lower lake ports, five of these being hard coal.

The rock bottom price in bituminous was reached this week dock men believe, when a further cut of 50c. a ton was announced. This brings the dock price for Youghiogheny, Hocking and Splint to $7 at the dock with run of pile at $6.50. Screenings are selling $4.75@$5.

The lack of demand, which is filling the docks, bears little or no hope for an early increase in business, and dock men are even less optimistic now than a week ago. Contracts are few and far between and dealers seem to be waiting for even further reductions in prices before laying in their winter stocks. Dealers are buying now in a ratio of about one car this year to ten cars at the same time last year.

The situation in hard coal is especially serious and wholesalers are doing their utmost to get supplies in on time.

MINNEAPOLIS

No Interest in Coal Buying — Lake Movement May Be Curtailed—No Efforts Being Made to Store Coal.

Every dull period while current seems worse than any other one. Hence the present difficulties with handling the coal traffic for the Northwest seem a great deal more trying and impossible of solution than do those of previous years, which have been disposed of. The public proposes to wait until it is convinced of the need and the desirability of buying, and of these two the desirability is still placed first.

Of course public opinion on trade matters is not a safe guide, although if the opinion is held strong enough and long enough the accomplishment of last fall and early winter may be repeated, when coal prices were forced down, aided by a providentially mild winter.

The present situation is paradoxical. There is more coal moving to the docks on Lake Superior than for several years at this time. But there is every indication of a sharp falling off of the coal tonnage. There has been a minimum of ore business, a small amount of grain and some little miscellaneous lumber and other freight. But it is not enough to keep the vessels busy, and they are refusing to go forward with coal unless they can see what they are to bring back.

Hence with coal moving fairly free, there is every chance of a sharp reduction of tonnage soon and nothing can be done to avert it. Even placing of orders for coal would not help bring forward more coal if there were no return freight. Orders if placed by consumers would repeat the experience of two seasons ago, when they simply waited until the coal was available. Orders placed in March were filled several months later, and at the price ruling at the time of shipment. These experiences have soured coal buyers. They feel that an order placed early may be of aid to the seller, but it has not worked to any advantage to the buyer. Any appeal to them on the ground of helping out the distribution or the people of the trade falls upon ears exceedingly deaf.

It cannot be denied that there is no evidence of great faith in the predictions of shortage being shown by the members of the coal trade. Dock concerns are not making any strenuous effort to stock now, and thereby have coal on hand to meet the certain demand of the fall when the anticipated shortage would begin to squeeze. Retailers are equally indifferent to the opportunity to make good money by stocking now at low prices and making something on the rise which surely comes with a scarcity. It therefore resembles ardent prayers for rain following which none of the faithful ever carry an umbrella.

Inland West

CHICAGO

Steam Market Declines — Domestic Trade Only Fair — Retail Stocks Are Heavy — Outlook Is Not Promising.

The trend of the steam market is still downward. Last week a great many experienced operators thought that the market had reached the lowest possible level, but this week has proved very conclusively that their opinion was wrong. Industrial depression prevails throughout the city, and it is not so much a question of price when it comes to selling as it is of finding a manufacturer who is in a position to use some coal under existing circumstances. The tendency on the part of the public is to put off purchasing.

Domestic coals are moving a little more freely than the steam sizes. The volume of tonnage sold is, however, far below the ordinary average for this time of the year, but when compared to steam coal, the domestic market is good. The favorites with the retail dealer at this writing are Franklin County coals, anthracite and Pocahontas, named in the order of their importance as related to present conditions. Retailers have large supplies on hand both of hard and soft coals.

The consensus of opinion is that the coal market will have to wait until the industrial situation is straightened out, but this will show no signs of improvement until the railroad controversy has been settled, wages and rates reduced, and purchases once more started by the roads. As it looks today, the market on coal will be dull for at least the next six weeks, provided, of course, there is no outlook for a strike on the part of the railroad brotherhoods.

ST. LOUIS

Warm Weather Brings Market to Standstill—No Storage Activity—Production Weakens Coal Prices.

Domestic storage of coal, which was good up until a week or so ago, has slumped until there is not much mov-

ing. Most of the dealers have their yards pretty well stocked up, so that there is no demand for domestic in St. Louis and a somewhat similar condition exists in the country. Many plants are going light on fuel, with the result that screenings are going begging. This condition prevails all over the Middle West.

There is nothing to indicate that there will be a change at any time in the next few weeks and the future looks exceedingly poor. Some anthracite is moving through. The Frisco bought 1,250 tons for May shipment for their branch lines.

Something like 25 cars of smokeless have been ordered the last week. The demand for coke is improving. There is no change in retail prices, although two or three dealers have a price war on, but this has little effect.

CINCINNATI

Smokeless Slack Weakens with Heavy Production of Prepared Sizes — Industrial Buying Unimproved — Retail Prices Firm.

Increased demands from both the Lake and seaboard for smokeless prepared sizes have undoubtedly put more nut and slack on the market than can be absorbed. New River and Pocahontas are having trouble in competing with the lower priced bituminous from southeastern Kentucky and West Virginia. Few sales of spot nut and slack have been made lower than $2.20. Steam users still are not inclined to buy heavily and further reductions may follow.

With the resultant selling at new low figures the costs are being tacked on prepared sizes. The few companies here that had block and lump to offer are asking $6 for it. Egg has also advanced 25c. to $5.50. Mine run is held at $3.50, also an advance, with few sales.

Requirements of gas coal for Eastern shipment to Tidewater somewhat strengthened the mine run of West Virginia, and left the splint producers a free way in the Western market. While reports here are that the gas coal operators are getting $2.25@$2.35 for mine run, $2.10 on this market was high, with splint and lower grades selling down to $1.75. Eastern Kentucky low grade slack could be had as low as $1.15 and the price varied up to $1.35. For higher grade coals it appeared that $1.65@$1.75 was the top of the market.

June prices are being conned over by retailers, though from present indications there seems little possibility that there will be any great changes except possibly on bituminous screenings.

DETROIT

Buyers' Indifference Continues — Reserves Being Consumed — Prices Are Unchanged—Anthracite Is Sluggish.

Bituminous—Offerings of steam and domestic are not awakening interest among buyers that the local wholesalers and jobbers believe should be manifested if adequate provision is to be made for fuel requirements for the coming winter.

Many industrial plants are running on shortened production and are providing for present requirements by taking coal from reserves. In doing so, they are placing themselves in a position where they will have to have prompt service when they start to buy. It is feared that in their attempts to get coal they will bring about another period of rising prices and uncertain supply.

Three-inch lump from Ohio mines is quoted $3.25, 2-in. lump is $3.15, ¾-in. is $3, mine run $2.25 and nut, pea and slack $1.90@$2. Four-inch lump from West Virginia is about $3.50, 2-in. is $3.25, ¾-in. $3, mine run $2.50 and nut, pea and slack $2. Smokeless lump and egg is $5.50, mine run $3.50 and nut and slack $2.25.

Anthracite—Householders are apparently holding back to a greater extent than usual as some retailers find that customers who ordinarily stock up early have not yet placed orders.

CLEVELAND

Operations Increase As Lake Movement Grows—Lower Lake Docks Congested—Industrial Market Weaker.

Bituminous—The last week seems to have brought a further slackening in plant operations. The spurt in the automobile and parts industries which took place earlier in the spring appears now to have been seasonal. Numerous plants for which much promise was held a few weeks ago are now slowing down. Various concerns supplying material to the automobile trade have only a few weeks work ahead and some see the necessity for closing down in sight.

Most industrial leaders believe that the present slump is merely a reaction from the too great optimism of a month or more ago and that business should see the beginning of a gradual permanent recovery soon. In the meantime, however, the needs for coal are diminishing and the demand is extremely light. Slack has weakened slightly in the last week and is now being quoted $1.50@$1.65. Other grades are holding their own.

Pocahontas and Anthracite—Dealers continue to talk of a price advance to come in anthracite shortly. This is expected to be about 25c. a ton. The demand has improved slightly. Pocahontas prepared sizes are not in over abundance.

Receipts of bituminous coal at Cleveland during the week ended May 21 were 1,153 cars; divided, industrial 803, retail 350, as compared with 1,001 cars the preceding week.

Lake—The adjustment of freight rates has had the desired stimulating effect. Operations at Ohio mines are continuing at their highest rate for the year as a result of the heavy movement of coal to Lake docks. This movement is resulting in congestion as coal is arriving twice as fast as it is being dumped.

At the present time the outlook is for a more meager ore movement than had been expected earlier in the season. This means that coal cargoes will continue scarce. Some of the large steamship companies are planning to retire about half of their fleets now operating owing to the discouraging ore prospects. The United States Steel Corporation, it is reported, is not expected to bring down more than 10,000,000 tons of ore this year, compared with around 30,000,000 last year.

COLUMBUS

Domestic Buying Increases — Steam Sizes Are a Drug—Lake Movement Is Heavy.

A better tone has developed in the coal trade. Retailers are disposed to buy more freely for stocking. There is a good demand for Pocahontas and some West Virginia splints. Retail prices show no tendency to soften. Hocking rescreened lump sells for $6.75, while ordinary lump is $6.25@$6.50. West Virginia splints are $7.50@$7.75, while Pocahontas is $9.50@$10. Anthracite is $14.50@$14.75.

A fair movement of Lake vessels is reported, although the dullness of the ore industry is holding up a more active trade. The H. V. docks at Toledo during the week ended May 21 loaded 186,563 tons as compared with 43,526 tons the previous week, making a total of 616,653 tons for the season. Loadings up to May 22, 1920, amounted to but 91,848 tons. The T. & O. C. docks during the same week loaded 41,691 tons as compared with 17,353 tons the previous week, making a total of 104,768 tons for the season.

Steam business is dragging in all sections. This is due partly to reduced consumption of steam grades and also because of the heavy production of screenings in providing for the Lake trade. Screenings from all fields are selling lower than for some time and the tendency is still downward. Prices have reached as low as $1.25 and in certain cases even lower. Manufacturing is not resuming to any extent.

Production has shown a slight increase in all fields, although the output is still extremely low. In the Hocking Valley, the output is about 23 per cent of normal. Cambridge and Crooksville are producing from 20 to 25 per cent.

West

DENVER

Prices Increased — Domestic Demand Lags—Industrial Activity at Standstill.

Colorado retailers are making a summer drive for the sale of more storage coal, if possible, now that the price has gone up again from 15 to 25 cents a ton at the mine, and a corresponding increase realized by dealers.

Market conditions, however, are unfavorable to heavy shipments out of the state, on the part of operators, or for

the encouragement of anything like normal traffic in intrastate points, due to the assembling of cars for the early summer fruit and spring crops.

Industrial activity is down to a near standstill, and the regular storage in sugar beet factories for the fall campaign is the only indication of a part-time working basis in lignite fields.

Southwest

KANSAS CITY

Retailers Stocking Domestic — Poor Steam Market — June Schedules Announced.

Dealers are placing orders for domestic grades for storage, but the consuming public is buying very little coal. Already some of the Kansas operators report their inability to care for all the domestic orders they are receiving, due to lack of demand for steam grades.

Mines are running about two or three days a week in Kansas but are doing better in north Missouri. Mines in Arkansas are operating about one and a half to two days a week.

Arkansas coal prices for shipment in June range, lump $6.50, mine run $4.50, slack $2.75; Kansas lump and nut $5, mine run $4.25, slack $3.75; north Missouri lump $4.50, mine run $3.85, washed slack $3.85.

South

BIRMINGHAM

Steam Trade Very Dull — R.R. Contracts Closed — Slight Advance in June Domestic Prices.

The only business of consequence taken on during the past week was the contract of the Seaboard for the year beginning July 1 for 680,000 tons, 450,000 of which will be furnished by the Pratt Consolidated Coal Co., 200,000 by the Pratt Fuel Co. and Empire Coal Co., and 30,000 by the Bankhead Coal Co. Figures at which contracts were closed are not available at this time. Big Seam mine run was taken for the most part, only a small tonnage of washed coal being included in the contract. Bids have been submitted on the requirements of the Atlantic Coast Line and the Southern and awards are expected in the course of a week or ten days.

Sales other than the above are confined to the spot market for a few hundred tons here and there, as commercial interests continue to buy only such quantities as are needed for immediate use. Steam quotations have not changed materially, prices being shown in the Weekly Review.

Householders are very slow in laying in coal for next season and dealers are finding themselves in a position where they will soon be compelled to suspend shipments until they can move some of the coal on hand. Quotations for June are as follows, for lump and nut sizes: Black Creek $4.80@$5.05, Cahaba $4.80 @$6.65, Carbon Hill $3.95@$4.25, Big Seam $3.55@$3.75, Big Seam (Mt. Carmel) $3.55@$4, Corona $4.80@$5; Montevallo $6.80@$7.

LOUISVILLE

Steam Demand Weakened by Heavy Screenings Production—Lump Movement Declining—Prices Range Lower.

Steam demand is now weaker than at any previous time this year. In filling Lake orders for lump and the good run of retailers orders, experienced in the past six weeks, the production of screenings has been heavy, with the result that many industrial consumers are fairly well stocked on cheap screenings, causing a comparatively poor demand for mine run.

Retailers are now fairly well stocked on prepared sizes and with the reduced production of lump the steam market stands a better chance of taking up excess production of screenings resulting from Lake movement.

Prices of many producers are merely quotations and are well undersold. Improvement in industrial activity is badly needed to force movement of coal. Railroads are on a minimum consumption. No line of buyers are consuming anything like normal supplies, with the result that the so-called low production comes closer to representing overproduction.

One jobber stated that while screenings were quoted at prices ranging $1.25 @$1.75, the low price could be reduced to $1 on any quantity business, on Hazard No. 6 and some West Virginia coals. Eastern Kentucky mine run is quoted at as low as $1.85 and West Virginia $1.75@$1.85, although some of the best grades are not quoted at much under $2.40@$2.50.

News From the Coal Fields

Northern Appalachian

ANTHRACITE

Independent Operations Increase — Steam Coals Sluggish—Buying Mostly for Prompt Delivery.

There has been considerable improvement in the independent operations during the past week. The washeries have not resumed operations as the market for steam coal is still sluggish.

None of the companies are storing coal at the present time. Operators are not contracting their steam sizes, waiting for a better price. As a result of talk of a reduction in freight rates, buying is mainly from hand to mouth.

More of the river washeries have opened operations but these are not going the way they were during the war, and it seems doubtful if they will ever regain the amount of business that they have had.

PITTSBURGH

Lake Shipments and Line Demand Decreased — Operations Decline — Prices Easier.

With a decrease in shipments to the Lake on account of the heavy accumulation of cars there awaiting vessel movement, and with further decrease in line demand, production has declined further and is hardly above 30 per cent of rated capacity, against about 40 per cent at the beginning of May. River mines have been nearly altogether idle all the month, while in point of number more than half the rail mines are closed.

Consumers are absolutely indifferent, and make purchases only as they must have coal. In no quarter is there any serious disposition to stock against future requirements, nor is any direct issue raised as to price. The consumers are simply without interest in the future.

Market prices are made by the relatively few operators who desire to run whether they make a profit or not, and perhaps the best that could be said of the operating mines is that they are losing less by operating than they would by closing. Prices have been softer in the past week, $2 representing the top rather than the bottom in actual sales of steam mine run. Byproduct has been freely available at $2 while in actual purchases the price has been shaded. Gas coal is lower but maintains a very substantial price lead over steam coal. Prices are shown in the Weekly Review.

UNIONTOWN

Frick Ovens Blown Out—R.R. Freight Cuts Anticipated—Buying Curtailed.

That industrial conditions in the coke region are no longer gaged by the number of beehive ovens in blast is reflected by the action this week of blowing out the remainder of their 19,000 ovens. While there are now no Frick ovens in blast, plants of the company are running at more than 25 per cent capacity, shipping raw coal to the Clairton byproduct plant.

Before the advent of byproduct plants the blowing out of all Frick ovens would have created a sensation. This week it was of no more than passing interest. It is now easily conceded that the day of the beehive oven is fast waning and while those already constructed are expected to be used yet for a number of years, no others will be built.

The announcement that railroad wages are to be reduced July 1 has caused a still further decline in the

fuel markets in this district. It would seem that consumers not having immediate need for tonnage, have withdrawn entirely from the market in expectation of benefiting by lower freight rates when their need does appear.

Operators are doing their best to stimulate buying at present low prices and easy transportation conditions but are meeting with no success whatever. Quotations for all grades of fuel are nominal, coal at $1.80@$2.25; furnace coke $3.25@$3.75 and foundry $4.50 @$5.25.

EASTERN OHIO

Heavy Lake Coal Shipments Increase Production—R.R. Buying—Slack Softens—Congestion at Lake Docks.

Despite continued depression in the coal trade, mines during the week ended May 21 again set a new high record in production for the current year. The field reached 70 per cent of capacity, the output being 437,000 tons, an increase of 7,000 tons over the preceding week. Output for the year up to May 21 amounts to 6,160,593 tons or an average of 50 per cent of capacity.

Lake coal is arriving at lower docks in much larger quantities than it has been possible to clear, with the result that there is now estimated to be on the docks enroute over 1,500,000 tons. The Ore & Coal Exchange, it is understood, requested operators to hold off shipping the last four days of this month in order that the situation may be cleared up.

Railroads are more active in both open buying and contract inquiries. The New York Central (Lines West) has just closed for about 1,000,000 tons of No. 8 coal to come from mines on their line of railroad, at a figure said to be slightly under $3.

Industrial contract inquiries continue very light and these buyers seem content as yet to supply their needs in the open market. There is an increased supply of slack in the market, with a consequent softening in the price on this grade.

Transportation facilities have been ample, with the possible exception of the Wheeling & Lake Erie, where some car shortage has developed because of the large quantity of Lake coal under load both at the docks and along the line.

CENTRAL PENNSYLVANIA

Miners Refuse Wage Conference Requested by Operators — Production Slightly Increased.

The United Mine Workers of District No. 2, through their officials, have refused a joint conference with the operators, in a communication directed to the producer's association. The worker's officials state that their position is in line with that of J. L. Lewis, international president, who said recently that the contract is binding until March 31, 1922.

The statement intimates that they will refuse to meet to discuss business conditions at this time. The coal operators recognize that the cost of living has been materially reduced; that wages have been reduced in practically every industrial activity except coal, and that the economic conditions are such as to justify the coal industry as a whole in bearing their fair share of the burden imposed by these conditions. It has not been intimated whether any further action would be taken to bring about a conference.

Production has been increasing slightly during the month of May. Up to and including May 20, there were 37,164 cars loaded, as compared with 30,346 in the corresponding period in April.

FAIRMONT AND PANHANDLE

Larger Lake Movement Aids Production—Slack Is Being Overproduced—Other Prices Unchanged.

FAIRMONT

Production was slightly increased the week ended May 21, the output reaching about the same figure as was observed in February. Larger companies were shipping more heavily both to the Lakes and to Tidewater. Neither spot nor contract buying was on a very large scale and prices were as soft as ever; mine run $2.25@$2.50 and as low as $1.90 had been offered for mine run for Lake delivery in some instances.

NORTHERN PANHANDLE

Coal continued to move to the Lake in fair volume but there was so much slack remaining and so little demand that prices on this grade were down to $1.75. Production at the most was not more than 50 per cent of potential capacity. Spot mine run brought $2.50 and lump $2.75.

CONNELLSVILLE

Coke Market Awaiting Iron Trade Developments — Low Phosphorus Coke Bought—Production Very Light.

The coke market continues to mark time, it being realized that nothing can develop until there is heavier consumptive demand. Nearly all the merchant furnaces are idle, most of them having stocks of pig iron that will last quite awhile with the present extremely light buying, while operations at foundries have continued to decrease.

Stocks recently existing are now fairly well liquidated except for some coke that has weathered so long that it is simply waiting to be absorbed for general heating purposes. The demand for spot lots for blast furnace consumption being practically nil while some demand continues for small lots for miscellaneous purposes, the curious condition exists that sales for outside purposes are sometimes made at higher prices, for standard furnace grade, than are obtainable from blast furnaces.

Report has it that the Robesonia Iron Co., which makes low phosphorus pig iron, has bought a four months' supply of coke of the special grade necessary at $3.75. If this is correct it would tend to support the appraisal of the ordinary furnace coke market at $3.25 @$3.50. Foundry coke of standard grade continues quotable $5@$5.50.

The *Courier* reports production in the week ended May 21 at 18,900 tons by the furnace ovens and 23,780 tons by the merchant ovens, making a total of 42,680 tons, a decrease of 610 tons.

Middle Western

SOUTHERN ILLINOIS

Carterville June Prices Announced—Production Declines with Weaker Demand—Steam Sizes Sluggish.

In the Carterville district the only thing that seems to move at all is a little lump. Egg, nut and screenings are heavy. Railroads are taking a little mine run, but it is not enough to do much good. Effective June 1, the association prices will advance to $4.05 for domestic sizes. The price on screenings is supposed to be about $2.85 and mine run about $3.50, but there is no indication that any coal is going at these figures.

In the Duquoin field the situation is worse. One and two days a week is the most that some mines get and several are idle. One or two of these mines are holding to the Carterville association prices, but most of them are meeting the Carterville independent figures, which are as low as $3.25 for lump and egg, $3 for nut, $1.75 for screenings and $2.50 for mine run.

In the Mt. Olive field one to two days per week is the best right now. All sizes are hard to move. Country shipments on domestic sizes are $3.25, St. Louis shipments $3 and screenings mostly on contract.

In the Standard field screenings are down to $1, mine run to $1.75, 2-in. lump $2@$2.25 and 6-in. lump $2.35@ $2.50. If anything, conditions are becoming worse. There is practically no coal going north or west to speak of.

MIDWEST REVIEW

Steam Market Poor—Price Cutting Is Frequent—Domestic Call Is Normal—R.R. Spot Buying.

In spite of the fact that more coal is being produced throughout the country, this has not proved to be the case with mines either in Indiana or Illinois. In round figures, production in Illinios has hovered between 36 and 38 per cent, whereas the Indiana mines have been running only from 33 to 35 per cent. Coal conditions have not improved during the past few weeks in the Middle West.

The news that the Frick people had closed their coke plants for the first time since 1894 and had laid off between 19,000 and 20,000 men came as a very disquieting piece of news to the Middle West coal trade. Operators realize that the Eastern coke plants were closed on account of the present stagnation of the steel industry. It had been hoped in the West that the steel industry was on the mend and would show signs of rapid improvement. It is now believed that steel will be

very quiet for the next three months. There will be no improvements whatever in the market on steam coal until the industrial situation improves.

All operators now realize that it is a question of time, and we will all have to wait with as much patience as we have until the railroad question is out of the way. It is believed that when reduced rates are put into effect, the railroads will come into the market to purchase coal. Industries which have been putting off action from day to day will set a definite date for resumption of operations, and conditions generally will be very much improved. Price cutting has been very marked in the Middle West during the past few weeks, and it has made some people feel that the lessons of the war were not taken very near to heart, and that the operators are rushing right back to pre-war conditions and selling their coal at figures considerably below actual cost.

The domestic market continues to be about normal for this time of the year. Domestic shipments, however, are showing some signs of improvement as the majority of dealers put off their May buying until the last minute, and placed orders for prompt shipment at the May quotations, which are from 10 to 15c. lower than the proposed June quotations.

Railroads are purchasing coal in considerable quantities on the open market, but we have heard of no new railroad contracts being placed this week. One or two industrial concerns of minor importance have placed small contracts for perhaps one-third to one-half of their normal requirements.

INDIANA

Poor R.R. Equipment Causes Slight Car Shortage—Steam Demand Poor—Prices Unchanged.

Operators are predicting a runaway market later in the year. Last week the situation was that of an actual car shortage where two mines situated on the Monon were forced to suspend operations for two days because of a lack of cars. The real reason was that there was a shortage of cars that were in condition for service, other cars that were available for the two mines being out of repair.

Prices are virtually the same, both at the mine and retail for all grades, but there is a distinct cut in coke. Gas companies are making every effort to market the large supplies of coke that have been piling up at the plants. Steam coal is sluggish, due to a reticence on the part of industries to increase production.

WESTERN KENTUCKY

Slight Improvement in Production—Weakness Shown in Steam Market—Rail Consumption Slightly Better.

Overproduction of screenings in the eastern Kentucky and West Virginia fields in producing lump and block for the Lake and retail trade has resulted in a generally weak market on all steam coal, making mine run harder to sell, and forcing very low comparative prices on screenings.

In spite of arguments of coal operators relative to stocking early in which the principal point made is that production this spring has been far off, some of the coal men claim that it means nothing, as small production this spring has been more than offset by weakness in general industrial operations.

Producers are working two to two and a half days, many companies not operating but a part of their mines, where they have more than one. This week's quotations are shown in the Weekly Review.

Middle Appalachian

HIGH-VOLATILE FIELDS

Production Shows Slight Gain—Lake Movement Growing—Prices More Firm—Tug River Lawlessness Affects Work-Time.

KANAWHA

There was an almost imperceptible improvement in market conditions during the week ended May 21. Production remained on about the same level, although it was possible, owing to a slight stiffening of prices, for a few more operations to resume work. Comparatively little coal was moving to the Lake.

LOGAN AND THACKER

A better demand was noticed in the Logan region. Production increased to 60 per cent of capacity, a large amount of River and Lake coal being shipped for storage. Lake shipments were gaining steadily in size and the Tidewater movement was becoming somewhat more general. Prices remained unchanged and there was little or no call for slack coal.

Williamson field production was limited by the trouble along Tug River. Frequent attacks on the mining camps demoralized operations and cut production, just at a time when it was beginning to reach normal again. It was not possible to take care of many orders, either spot or contract.

NORTHEASTERN KENTUCKY

Reduction in Lake freights was conducive to a larger production, particularly on Beaver Creek. A number of companies found it possible to resume operation and with this resumption a shortage of mine labor is developing, as a large number of the men have left the field recently.

VIRGINIA

Production rate was unchanged and there was very little spot demand in evidence. Furthermore spot prices were such that even the smaller concerns were not disposed to accept any new business.

LOW-VOLATILE FIELDS

Marine Strike Bars Larger Output—Conditions Show Improvement—Western Demand Picking Up.

NEW RIVER AND THE GULF

New River production declined during the week ended May 21. This was not caused by any diminution in demand but because of the Marine strike. There continued to be many inquiries with prices climbing upward slightly. Export coal ranged $3@$3.75, Inland quotations were $3, all for mine run. Western demand was becoming more active.

Although the Marine strike interfered to some extent with the Gulf output yet there was little change in market conditions. Companies were making arrangements to increase their working time, with some concerns working on a full-time basis. Prices showed a tendency to advance with a growing demand for export coal. Some additional inquiries for contracts were noted. Many companies, however, are refraining from quoting on contract until prices become more stabilized.

POCAHONTAS AND TUG RIVER

With more coal under contract and demand both East and West growing, further gains were scored in the Pocahontas region during the week ended May 21. Much of the coal was going to Tidewater. This call has not reached such proportions, however, as to increase prices on mine run. A better Western domestic market caused a slight raise in lump prices, $5@$6 now being quoted.

Tug River production held up to 100,000 tons, the output being maintained despite the fact that one of the largest operators had closed down. There was a growing demand for the output and particularly for prepared sizes in the Western markets. It was also easier to market mine run at Tidewater than it had been.

West

UTAH

No Storage Buying — Public Awaits Further Price Cuts — Production Rate Unimproved.

As was predicted, the drop in the retail price of 50c. a ton has not induced buying for storage purposes. The only effect it has had, according to some prominent retailers, was to enable purchasers of emergency coal during the cold snap of the past week to get it for less than they would otherwise have had to pay.

One of the large operating companies has started to urge people to store coal, through advertisements in the newspapers, but regarding prices it only says there is a very slender chance of their coming down. Many coal men are of the opinion that so long as there is one chance in a hundred of prices coming down, the public will not buy for some months.

MINE And COMPANY NEWS

ALABAMA

The Central Iron & Coal Co., of Holt, Tuscaloosa County, has donated a free site, water, gas and lights and $10,000 in cash toward the erection of a grammar school at that point to cost approximately $40,000.

The Garnsey Coal Co. has been incorporated at Birmingham with a capital stock of $2,000. Brewer Dixon is president, K. E. Cooper, vice-president and J. W. Dickinson, secretary-treasurer.

INDIANA

The coal contract for Indianapolis schools for the ensuing year has been awarded to the **Indianapolis Coal Co.**, which has held the contract for several years. The bid of the company was $5.15 per ton on egg and lump; $4.95 per ton on mine run and $4.75 on nut and slack. These figures were the lowest among those submitted by eight companies, with the exception of the nut and slack. **The Stockton Coal Co.** bid $4.50 on this, but it was explained that the stock bid on by the latter company was not fitted for consumption in plants such as are installed in some schools. The school city uses about 3,000 tons of egg and lump a year; 14,000 tons of mine run and 5,000 tons of nut and slack.

The Active Coal Co., Indianapolis, has filed papers with the Secretary of State, showing a capitalization of $150,000, for the purpose of maintaining and operating coal elevators. The directors are P. M. Gale, William M. Bosley and Warren K. Mannon.

Articles of incorporation have been filed with the Secretary of State showing the organization of the **Rockville Coal Mining Co.**, at Rockville, with a capital stock of $100,000. The company will engage in the mining of coal, clay, shale, etc. Directors are H. L. Hancock, E. M. Woodward, W. M. Scank, Harry Rice and W. P. Harrison.

Articles of incorporation have been filed with the Secretary of State by the **Persons Coal Co.**, of Jasonville, showing a capitalization of $150,000, and will engage in the operation of coal mines. The directors are James H. Persons, Frank B. Harrison and Homer O. Bedwell.

The motion of the defendant for a change of venue from Shelby County, of the case of the **Atlas Mining Co.** against the Indianapolis Heat & Light Co., has been granted by Judge Alonzo Blair and the case was sent to Rush County for trial. The complaint was received on a change of venue from Marion County.

Papers have been filed with the Secretary of State showing the organization of the **Catlett Burnett Heirs Corporation**, of Indianapolis, with a capital stock of $10,000, for the drilling and mining for coal, gas and oil. The directors are Harry Bowen, C. S. Burnett, G. C. Burnett, J. H. Wooley, Harrison Adams, L. A. Brown, J. O. Adams, F. O. Harris, Sam Kinnett, O. W. Stanley and Everett Warner.

KENTUCKY

The L. P. Kleiderer Coal Co. was sold at Henderson at a Federal bankrupt sale. B. G. Witt, of the Ohio Valley Banking & Trust Company purchased the mining property and 3,354 acres of coal rights for $25,000. Because of the low price received it is doubtful whether the sale will be confirmed by the referee in bankruptcy.

The Kentucky and West Virginia Power Co., of Hazard is planning increased facilities for production of coal and furnishing power to other industries. Amended articles of incorporation have been filed increasing the capital of the company from $6,000,000 to $10,000,000 in order to supply funds for expansion.

The May Coal Co. is a new $100,000 corporation organized at Alphoretta, for development in the Beaver Creek Valley coal field. A. J. May is the head.

The Elkhorn Mining Corporation has shut down until September its extensive coal mines on Beaver creek, throwing many out of employment. Unprofitable operations under prevailing conditions is given as the reason.

The Hignite Coal Co., with operations in Bell County and elsewhere in Kentucky, held its annual meeting recently. John Hoffman, who has been its president since it was acquired by the new corporation was re-elected as well as the old board of directors.

Because the **Virginia Iron, Coal & Coke Company, the Hazard Coal Corporation** and the **Montgomery Coal Corporation** have failed to keep their contract and pay the cost of the construction of a six-mile railroad spur in Perry County in excess of $200,000, the petition in the case alleges, the L. & N. has brought suit against them for $158,156.77.

H. W. Bennett, Massachusetts, has filed suit in the Lexington Federal Court, claiming a one-half interest in properties operated by the **Beaver Creek Consolidated Coal Co.**, and asks the court to decide the questions at stake.

There is a good deal of development going on in the Carr's Fork neighborhood beyond Hardin, six or seven miles out of Hazard in Perry County. **The Wisconsin and Millers-Haskins Coal Co.'s** are building several hundred houses, while the **Knott Coal Corporation**, beyond Sassafras, is building tipples, grading tracks, etc. **The Scuddy Coal Co.** is about ready to begin operating several miles beyond Hardin on Carr's Fork.

MINNESOTA

W. C. Brown, formerly manager of a Duluth stock exchange house, F. E. Bryan and John Pears, both of Minneapolis appeared before the Duluth Commercial club industrial committee recently and presented details of their plan for organizing the **Duluth Atomized Fuel Co.**, which would turn the peat of northern Minnesota into fuel. They are asking the committees' indorsement of their plan for selling stock. The capitalization of the company will probably be about $400,000.

Despite some very low figures named in competition for 7,500 tons of coal for the **Board of Education of Minneapolis**, the bids were rejected, and the city purchasing agent will buy coal in the open market for the city schools.

The State of Minnesota has awarded contracts for coal for state institutions. **The Inland Coal & Dock Co.**, of Minneapolis, received 21,000 tons; the **North Western Fuel Co.**, of St. Paul, 10,000 tons; and the **Pittsburgh Coal Co.**, 2,150 tons.

The Ender Coal & Coke Co., Chicago, received a contract at New Ulm, for furnishing coal for the city power plant, for southern Illinois screenings, 1¼ in., at $6.75 f.o.b. New Ulm. This was 30c. under the next figure.

MISSOURI

The Morton Coal and Mining Co. has been formed and has applied for incorporation papers. Peter Morton is the president; F. L. Leapley, vice-president, and I. N. Novinger, secretary-treasurer. The company plans to take over Mine No. 21 near Novinger.

OHIO

The Department of Justice is investigating the circulation of anarchistic literature among coal miners of Ohio, Indiana and other states, which advocated overthrow of the government. Representative Cooper, Ohio, denounced the circulation of the literature, saying the miners were loyal and that labor unions had no part in it. He said he represented a district in which there were 18,000 union coal miners and that 305 of the 392 coal mines in southern Ohio are idle. Representative Sanders, Ind., said he had heard the same petition had been circulated in Indiana. It was signed by the Communist Party.

The Carter Coal Co., whose mines are located in the smokeless district of McDowell County West Virginia, have opened a sales office in the Dixie Terminal Building in Cincinnati. W. S. Denham is in charge as sales manager and H. G. Fitzgerald as his assistant. The company formerly marketed its output through an Eastern selling agency.

An amended answer and cross petition has been filed in the case of the **Ohio & Kentucky Fuel Co.** against the **Monpassro-Warrior Coal & Coke Co.** The defendant asks for judgement of $5,203, alleging a breach of contract in the delivery of certain coal stocks.

The East End Coal Co., of Nelsonville has been chartered with an authorized capital of $20,000 to mine and sell coal. Incorporators are George Adamson, Alonzo Coakley, Lewis P. Rice, Jeffrey D. Adamson and Charles G. Shapard.

Cleveland dealers and jobbers are conducting quite an advertising campaign to induce domestic and other consumers to lay in their winter's supply of fuel. It is reported that increases have been anounced in the mine prices on Pocahontas as a result of increased buying on the part of dealers in anticipation of better demand. It is expected this will stimulate some buying on the part of consumers.

OKLAHOMA

For the purpose of lending financial support to concerns engaged in developing oil and coal resources of the Okmulgee district, a group of well known men of Okmulgee have organized a general financial corporation under the name of the **Leland Corporation of Okmulgee** with an authorized capital of $1,000,000. The officers and directors are all affiliated with the Kingwood Oil Co., the Citizens and the Central National banks and are as follows: George Leland, president; W. C. Newman, vice-president; L. W. McLean, secretary and treasurer; J. T. King, W. E. Wood, M. F. Graham and H. E. Kennedy, directors.

PENNSYLVANIA

The Keister-MacQuown Fuel Co. of Pittsburgh has been made the exclusive sales agent for the **Bessemer Fuel Co.** with mines located at Portersville on the W. A. R.R., Butler Mercer district.

Conditions in the Connellsville coke region are about the same, with local up and down changes. Thompson No. 1 plant of the **Redstone Coal & Coke Corp.**, which has been mining part time, is now running full. The Alicia No. 1 coke plant of the **Pittsburgh Steel Co.**, which has been mining full for several weeks, is now down to 50 per cent.

In the Irwin Gas Coal basin in Westmoreland County, Edna No. 1 and 2 mines of the **Hillman Coal & Coke Co.**, which have been operating about two days a week, are now down entirely. At Edna No. 1 they are taking advantage of the shutdown to gunite the main haulage slope.

In the Pittsburgh District the **Pittsburgh Coal Co.** are mining full, or nearly so, on Lake shipments, made possible by the 28c. freight rate reduction on shipments of coal to Lake ports.

No. 8 breaker of the **Lehigh Coal & Navigation Co.** at Coaldale was entirely demolished recently by a fire of unknown origin. An alarm was sounded at once but before help could arrive the building was a sheet of flames.

W. J. Rainey, Inc., has closed its Pittsburgh office and appointed the **Bixler Coal & Coke Co.** as exclusive sales agents for Rainey foundry coke in the states of Michigan, Ohio and Western Pennsylvania.

The motor barn and three electric mine motors, with electric equipment belonging to **Burns Brothers** at Grampian, were totally

destroyed by a fire, entailing a loss of $20,000, on May 10. The mine has been idle for more than a month, but the men had decided to go to work at the district scale price. The loss makes a resumption of work impossible for several months.

The Dorothy mine of the **H. C. Frick Coke Co.**, closed down since February, has been reopened, furnishing employment to a force of 200 miners. The mine is being operated in full. A number of improvements were made during the idle period.

One of the most important coal transactions in recent years in the central Pennsylvania field was consummated recently when the **Penelec Coal Co.** and the **Conemaugh Smokeless Coal Co.**, both of Johnstown, merged interests. The Penelec company operates mines at Lockwood, Clearfield, Philipsburg, Johnstown and Seward with an annual output of approximately 18,000 tons. The officers are: F. T. Hepburn, president; P. J. Morrissy, vice president; L. A. Wood, secretary; A. E. Walbridge, treasurer; directors, John W. Walters, George T. Robinson, Stephen C. Pohe, P. J. Morrison and W. A. Reiber. The Conemaugh company is interested in Indiana County, largely in the Robindale district. The Robindale holdings were sold to H. D. Walbridge & Co., on July 1, 1920, for $1,000,000. The present output is from 600 to 800 tons per day. The mines will be operated more extensively and the product will be used by the Penn Public Service Co.'s mammoth plant at Seward. The Penelec officers will have charge of the new concern.

TEXAS

The J. B. Robertson Coal Co., recently organized at Calvert, has secured leases on several large tracts of land near Calvert and is preparing to carry forward extensive developments. Tests are now being made for the sinking of a shaft four miles northeast of Calvert. The company expects to make Calvert its chief shipping point.

The lignite mines about Rockdale are now running full time with about 2,000 operatives employed. Companies now operating the Rockdale mines are: **International Coal Co., Ira Perry Coal Co., Rockdale Lignite Co., Texas Coal Co., Big Lump Lignite Co., Hicks Coal Co., Rockdale Consolidated Coal Co.**, and **Federal Fuel Co.**

UTAH

The State of Utah is to make efforts to establish its title to certain coal and oil lands in Emery and San Juan counties, occupied by **Lewis H. Stohr, L. W. Kelly** and others. The question involved is whether or not the land had "a known mineral value" at the time the state's title would otherwise have attached. The applications of **W. R. Hensleigh, the American Fuel Co.** and the **National Coal Co.**, involving coal lands in Grand and Carbon counties, have also been set for hearing in the coal land office.

The first sale of a lease of 2,080 acres of coal land to be held in the U. S. Land Office under the coal mining lease law of February last year, has been effected. This marks the beginning of the sale of many designated coal land areas within the state. The lease just granted is in the Castlegate district of Carbon County. The price was $10 an acre, to the **Cameron Coal Co.** on a royalty basis of 10c. a ton.

Five operating companies in the Spring Canyon district have ready for use a fully equipped motor rescue car, which is believed capable of reaching any point in the district within fifteen minutes on call. The truck will carry six men and will be operated by an organization representing the companies which will be known as the **Spring Canyon Mine Rescue Association.**

WEST VIRGINIA

A large tipple at the mine of the **Willis Branch Coal Co.**, at Willis Branch, Fayette County, was destroyed by fire recently.

Coal produced in the Pocahontas region will be sold by the newly organized **Atlantic & Pacific Fuel Corporation** which has a capital stock of $50,000. The general office is to be at Bluefield for the time being. Those having an active part in organizing this company were: Rucker Jennings, C. J. Kilgore, L. A. Mann, C. W. Scott, of Bluefield; J. E. Rhodemyre, of Ashland, Ky.

Impetus will be given to development of coal territory on Milam's Fork, through the leasing of coal in that section by two different companies. **Harvey Morris**, of Huntington, has leased a tract on Milam's Fork and is perfecting plans for the development of the property. Mr. Morris is president of the West Virginia Standard Coal Co., with headquarters at Huntington. The second lease on Milams Fork coal land was taken up by **J. T. Morris**, of Beckley, well known in smokeless circles, who until recently was one of the principal figures in the Morris Smokeless Coal Co. which operated at Morco on the line of the Virginian Ry.

John Laing and associates are making a test on the holdings of the **Beaver Coal Co.** between Maben and Harper on the main line of the Virginian, this being in smokeless territory. There are 3,000 acres in this tract and if the test proves satisfactory it is assumed that Mr. Laing will arrange to develop the property.

Organized not long ago for the purpose of operating on Coal River, the **Stone Castle Coal Co.** is now engaged in making active preparations for the initiation of development work at Peytona where the company will operate. This concern has a capital stock of $50,000 and has holdings at the point named amounting to about 500 acres. At a meeting held a short time ago E. B. Snider of Charleston was elected president and general manager and W. S. Wood of Charleston vice-president. There will be no delay in driving a heading into the No. 2 gas coal. About four months will be required to install a plant and have the mine in readiness for operation.

In order to permit the expansion of activities the following companies have secured the necessary authority from the Secretary of State to increase their capital stock: **Wet Branch Mining Co.**, of Charleston, J. P. Cameron, president, from $150,000 to $300,000, the company also being authorized to move its headquarters from Charleston to Pittsburgh, Pa.; **Hazy Eagle Collieries Co.**, of Charleston, F. W. Truscott, president, from $200,000 to $400,000; **Purity Pocahonats Coal Co.**, of Bluefield, from $150,00 to $300,000; **Woodland Coal Co.**, of Scottdale, Pa., Charles H. Loucks, president, from $400,000 to $600,000; **El Grove Mining Co.**, James A. Paisley, Cleveland, president, from $1,000,000 to $2,000,000; **South Penn Coal Co.**, of Morgantown, T. B. Henderson, president, from $25,000 to $100,000; **Forest Coal Co.**, of Fairmont, H. W. Showalter, president, from $100,000 to $300,000; **Pittsburgh-Wellsburg Coal Co.**, J. A. Dahlburg, president, from $50,000 to $75,000; **Bakertown Coal Co.**, of Keyser, James E. Cross, president, from $5,000 to $25,000.

In the nature of new equipment just secured by the **Fairmont & Cleveland Coal Co.** for use at its Parker Run mines near Rivesville are ten gathering locomotive motors, these motors having been secured from the General Electric Co.

BRITISH COLUMBIA

Production for the month of April stands at about the same figure as that for March. In the Vancouver Island fields the March output was 134,837 tons while for April it was 135,669 tons. The most notable increase is in the Nicola-Princeton Field, where the production of the Middlesboro Collieries, the Fleming Coal Co., and the Coalmont Coal Co. have all risen. In the Crow's Nest Pass there has been a decline of 8,678 tons, the figures being 68,739 as against 60,061 tons.

COAL OUTPUT FOR APRIL, 1921

Mine	Tons
Vancouver Island Collieries	
Canadian Western Fuel Co.	39,773
Canadian Collieries (D) Ltd.	
Comox	40,336
South Wellington	7,756
Extension	17,512
Nanoose-Wellington Coal Co.	2,792
Granby Colliery, Cassidy	26,584
Old Wellington (King & Foster)	916
Total	135,669
Nicola-Princeton District	
Middlesboro Collieries	5,133
Fleming Coal Co.	2,507
Coalmont Collieries	6,278
Total	13,918
Crow's Nest Pass District	
Crow's Nest Pass Coal Coal Creek	32,979
Michael	20,818
Corbin Coal & Coke Co., Corbin	6,264
Total	60,061
Grand Total	209,648

The Canadian Western Fuel Co., of Nanaimo, has been reorganized as a $5,000,000 corporation to be known as the **Western Fuel Corporation of Canada, Ltd.** The head office will be in Nanaimo. It formerly was at San Francisco, Cal. but at the time of the last reorganization, in the first years of the war, was transferred to Nanaimo.

NOVA SCOTIA

The Dominion Coal Co. has received an order for 25,000 tons of coal to be landed in British ports. This is the first coal order received by Dominion since the coal strike started in England. The cargoes will be shipped from Sydney.

An order or 60,000 tons of coal has been placed by the Canadian National Rys. with the **Indian Cove Coal Co.**, according to Manager T. J. Hartigan.

Traffic News

In the case of the **Mathieson Alkali Works**, relating to rates on coal from Clinchfield and other Virginia, Kentucky and West Virginia mines to Marion, Saltville and Mathieson Alkali Works, Va., the commission has authorized the **Virginia Iron, Coal & Coke Co.**, to intervene.

In the case of the **Corona Coal Co.**, relating to rates on coal to New Orleans and Mobile by rail and water, the commission has allowed the Alabama Coal Operators' Association to intervene.

The question of differentials on coal rates on commercial shipments from the Ohio fields, the inner and outer crescent of West Virginia will be opened before a special examiner of the I. C. C. who has been assigned to take testimony on the matter at Columbus, July 11. The hearing is on a complaint filed by the **Southern Ohio Coal Exchange**, seeking to secure different differentials as between the three districts. The present differential between Ohio districts and the inner crescent is 40c. and between the Ohio fields and the outer crescent, 60c.

The more the revision of coal freight charges into Minnesota and Dakota points from the Lake Superior docks is studied, the less intelligible the matter becomes. The I. C. C. made its order on rates covered by interstate commerce which applies to shipments handled by the Great Northern, the Soo Line and the Omaha. The fact that the order was given ninety days before it became effective seems to point to the commission not regarding it as final. Study of the order seems to indicate that it does not lower the rate to Minneapolis, but instead it raises it about 18c. while St. Paul is not mentioned. Inasmuch as St. Paul has the same short mileage by two roads that Minneapolis has by a third, it is probable that the same thing would result. However, railroad men are working over the order and are trying to interpret it as best they can, presumably with the intention of submitting their findings to the commission for a ruling before the effective date of July 6.

It is announced that the Burlington road is surveying for an extension from O'Neill, Neb., to Yankton, S. D. where connection would be made with its connecting line, the Great Northern. This would give direct connection from the Twin Cities to the Coal fields of Wyoming.

The Coal, Coke & Iron Committee, Central Freight Association territory, has docketed the proposal to cancel rates on bituminous coal from mines in West Virginia on the Kanawha & Michigan R.R. to stations on the B. & O. R.R.-Newark, Ohio, to Sandusky, Ohio, incl., leaving no through rates in effect. Requests for hearing must be made not later than June 4.

Cincinnati and Louisville have both filed protests through local organizations against the announced increases in freights of the L. & N. R.R., effective June 16. **The Cincinnati Purchasing Agents Association** has filed a protest with the I. C. C., as it is interstate commerce to that point, while through the **Louisville Board of Trade** protests are being filed both with the commerce commission and the State Railroad Commission, asking that increases be held up pending investigation of the reasonableness of the rate.

The Southern Appalachian Coal Operators' Association and others of Knoxville, Tenn., in a complaint to the I. C. C. attack as unreasonable the rates on Lake cargo coal from its mines in Kentucky and Tennessee to Toledo, for the trans-shipment by vessel.

The Procter & Gamble Mfg. Co., of Cincinnati has complained to the I. C. C. against unreasonable rates on coal from Mt. Olive and Staunton, Ill., to Kansas City.

In the **Perry Coal Corporation** case before the I. C. C., relating to rates on coal from complainants' mines in Illinois to points in the St. Louis and East St. Louis districts, the Central Illinois Coal Traffic Bureau has been allowed to intervene.

The Supreme Court of Alabama recently rendered a decision in the case of the **Mobile & Ohio R.R. vs. Zimmern Coal Co.**, Mobile, in which it was held that a railroad company has not the right to confiscate coal being transported for filling contracts already executed. The decision is the first of its kind ever rendered in Alabama and is of unusual interest to the coal trade. The railroad contended that it seized the coal for the operation of its trains during the shortage in 1920.

Personals

C. K. Brown, of Moundsville who had been in charge of mining extension work in the northern Pan Handle District for the State University was transferred to Morgantown and has been appointed assistant director of the mining extension work at the university.

William McKell, president of the McKell Coal & Coke Co., has been appointed a member of the Capitol Building Commission of West Virginia by Governor E. F. Morgan. Mr. McKell lives at Glen Jean.

T. H. Johnson, of Bellaire, Ohio, president of the Chesapeake Coal Co., operating near Barrackville, W. Va., was looking over this plant during the latter part of May.

Gail Fishback, Fairmont representative of the Valley Camp Coal Co., has recovered from a sick spell which confined him to his home for several days during the early part of May.

J. D. Huddell of New York has been appointed eastern sales manager of the Brady Coal Corporation and will make his headquarters in Philadelphia.

J. R. Blackburn has been appointed as general superintendent of the Clarion Coal Mining Co. and of the Victor Coal Mining Co. The main offices of the companies named are in Philadelphia.

T. C. Wilcox, who has been appointed manager of the New York office of the Tidewater Coal Co., and who will soon take over that office, was a recent visitor in the Pittsburgh field.

Harry B. Martin of Elkins, secretary of the Green Coal Co., Elkins, W. Va., spent a few days in Washington during the early part of May.

Among the officials of the various coal associations gathered in New York for the National Convention were: **G. H. Caperton**, Charleston, president of the New River Operators' Association; **A. Lisle White**, of Clarksburg, president of the Northern West Virginia Operators' Association; **J. G. Bradley**, Dundon, president of the West Virginia Coal Operators' Association; **J. C. McKinley**, of Wheeling, president of the Northern Pan Handle Operators' Association; **Walter Thurmong**, of Logan, president of the Logan Operators' Association; **C. C. Beury**, of Charleston, treasurer of the New River Operators' Association; **Garner Fletcher**, of Huntington, member executive committee of the New River Association; **C. H. Jenkins**, of Fairmont, director of the National Coal Association; **W. H. Cunningham**, of Huntington, secretary of the West Virginia Coal Association. **T. L. Lewis**, of Charleston, secretary of the New River Operators' Association; **George S. Brackett**, of Fairmont, secretary of the Northern West Virginia Coal Operators' Association.

R. R. Wilson, superintendent and resident manager of the Granby Consolidated Mining & Smelting Co.'s collieries at Cassidy, Vancouver Island, has resigned and his duties will be assumed by **Charles Campbell**, one of the company's well-known officials.

Announcement has been made that **W. B. MacQueen** has become associated as a member of the firm of C. W. Williams Fuel Co., Inc., New York City, and that **O. W. Seaberg** has been appointed sales manager of the New York office of the same company. Mr. MacQueen is well known in the coal trade and goes to the Williams Fuel Co. from the office of W. A. Marshall & Co. Mr. Seaberg was formerly sales agent of the Seaboard By-Product Coke Co. of Jersey City and is well known among the trade.

Wilbur A. Marshall, president of W. A. Marshall & Co. accompanied by **Raymond Havemeyer** of his sales force, are in Montreal where the Canadian offices of W. A. Marshall & Co., of Canada, Ltd., are located.

L. A. Stephens, formerly manager of the coal department for M. A. Hanna & Co., has resigned his former position and accepted the managership of the Inland Coal & Dock Co., at Duluth.

E. R. McMillan of the Seattle station of the Bureau of Mines has visited recently coal washing plants in Illinois and Pennsylvania in connection with coal washing work at his station.

Charles A. Owen, president of the Imperial Coal Corporation, has returned from a visit to Washington and Johnstown. In the former city he had a conference with George H. Cushing, secretary of the American Wholesale Coal Association.

J. W. Blower, president of the Hisylvania Coal Co., of Ohio, and allied corporations is on a tour in England, France and Belgium. Mr. Blower will visit his birthplace in England.

T. S. Crockett, president of the Leckie Coal Co., of Columbus, who was seriously ill for several months is now rapidly recovering. His many friends are congratulating him on his recovery as his life was dispaired of for a week or more.

D. O. Wing has been appointed by the Holdred Collieries of West Virginia as local manager of the operation at Blair, Logan County.

R. P. Gillham, vice-president of the Campbell's Creek Coal Co. and long identified with that corporation, was married recently to Miss Edith P. Ohlmann, a niece of his first wife. The Cincinnati coal trade offered its congratulations to its sterling member.

The Cincinnati branch of the Amercian Wholesale Coal Association has offered three candidates for election to the directorship made vacant by the recent resignation of Tom Burke. **George Kearns** of the Kearns Coal Co., **Fred Legg**, president of the Logan and Kanawha Coal Co. and **Robert Magee** will be chosen by the ballots of the local members.

C. W. Henry, manager of the Cincinnati office of the Amherst Fuel Co. is in New York attending to trade matters. Another Cincinnatian on a visit to the eastern metropolis is **A. G. Polk**, vice-president of the Kentenia Coal Sales Co.

The Central Pennsylvania association of operators was well represented at the meeting in New York of the National Coal Association. Among those who attended were **Col. Fred B. Kerr** of Clearfield; **J. W. Wetter** of Philipsburg; **G. W. Shillingford** of Clearfield; **H. J. Mehan** and **Enoch Carver** of Johnstown; **J. S. Somerville** of Robertsdale; **R. H. Somerville** of Winburne; **James H. Allport** of Barnesboro, **Charles O'Neil and W. A. Jones** of the central Pennsylvania association.

Association Activities

Hazard Coal Operators' Association

Lower costs of production and means to bring it about were the principle items considered by the executive committee of the Hazard Coal Operators' Association at a recent meeting in Cincinnati. One proposal is to take up the matter of lower costs of power with the companies in the Hazard field supplying this. The committee also determined upon pressing a claim before th Interstate Commerce Commission against increasing the freight rate to Cincinnati.

Michigan-Ohio-Indiana Coal Association

The program for the annual convention of the association, which will be held at Cedar Point, Ohio, June 15, 16 and 17 has been announced by Secretary B. F. Nigh. Registration and reception of members will take up the first day. The first business session will start at 10 A. M. June 16 with an address of welcome by President Homer C. Gill, report of Secretary B. F. Nigh and the appointment of the committees. Tom L. Lewis, secretary of the New River Coal Operators' Association, E. C. Maurer of the Glen Runs Coal Co., of Cleveland and D. F. Williams, vice-president and general sales agent of the Hudson Coal Co., Scranton, Pa., will be on the program. On the program for the second day will be A. L. Allais, president of the Hazard Coal Operators' Association; Samuel Weiss of the Semet-Solvey Co., Detroit and Walder D. McKinney, secretary of the Southern Ohio Coal Exchange.

Monongahela Valley Association

An important meeting of the association, a coal organization, was held at Clarksburg on May 16. At that meeting the principal topics under discussion were coal conditions and freight rates. It was the consensus of opinion among members that there would be a revival of demand before long but that so far conditions have undergone little improvement.

Northern West Virginia Operators' Association

An important meeting of the transportation committee of the association was held in Fairmont for the purpose of discussing the assigned car question from all sides, the transportation committee desiring to make a report to the association as a whole so that there would be unity of action in connection with the consideration of this question by the National Coal Association at its annual meeting in New York.

Information was received by George S. Brackett, secretary of the association that the Pittsburgh & Lake Erie Railroad had reduced its rate to New England points in order to meet competition on the part of the Pennsylvania. Operators along the Monongahela Railway and the Morgantown & Wheeling will receive the benefit of the reduction.

Utah-Idaho Retail Coal Merchants' Association

The Western States Coal Journal is the name of a monthly periodical representing the association, the first number of which is just off the press. The co-operation of all engaged in the coal industry is earnestly sought in this issue, as it is claimed that this is the only way to meet the common problems of the day. The new president of the association is H. F. Fernstrom. The editor is S. L. Billings, Jr., the secretary.

Coming Meetings

American Institute of Mining and Metallurgical Engineers will meet at Wilkes-Barre, Pa., Sept. 12 to 17. Secretary, Bradley Stoughton, 29 West 39th St., New York City.

Michigan-Ohio-Indiana Coal Association will hold its annual meeting June 15, 16 and 17 at Cedar Point, Ohio. Secretary, B. F. Nigh, Brunson Bldg., Columbus.

National Association of Cost Accountants will hold its annual convention at Cleveland, Ohio, Sept. 14, 15 and 16. Secretary, S. C. McLeod, 130 West 42d St., New York City.

West Virginia Coal Mining Institute will hold its semi-annual meeting June 7 and 8 at Fairmont, W. Va. Secretary, R. E. Sherwood, Charleston, W. Va.

Rocky Mountain Coal Mining Institute will hold its summer meeting beginning June 26 at Salt Lake City, Utah. Secretary, F. W. Whiteside, Denver, Col.

Mine Inspectors' Institute of America will hold its twelfth annual meeting at Charleston, W. Va., July 12 to 15. Secretary, J. W. Paul, Bureau of Mines, Pittsburgh, Pa.

Illinois and Wisconsin Coal Dealers' Association will meet at Chicago, Ill., July 13 and 14.

American Society for Testing Materials will hold its annual meeting at the New Monterey Hotel, Ashbury Park, N. J., June 20 to 24. Secretary, C. L. Warwick, 1315 Spruce St., Philadelphia, Pa.

Illinois Mining Institute will hold its spring outing the early part of June on the Mississippi and Illinois Rivers, the boat leaving St. Louis for Peoria on June 3 and returning on June 5. Secretary, Martin Bolt, Springfield, Ill.

The American Mining Congress and National Exposition of Mines and Mining Equipment. The twenty-fourth annual convention on Oct. 17 to 22 at the Coliseum, Chicago, Ill. Assistant secretary, John T. Burns, Congress Hotel, Chicago, Ill.

American Institute of Chemical Engineers will hold its spring meeting, June 20 to 24 at Detroit, Mich. Secretary, Dr. J. C. Olsen, Polytechnic Institute, Brooklyn, N. Y.

The American Wholesale Coal Association will hold its annual convention in Washington, D. C., June 7 and 8. Secretary, G. H. Cushing, Woodworth Bldg., Washington, D. C.